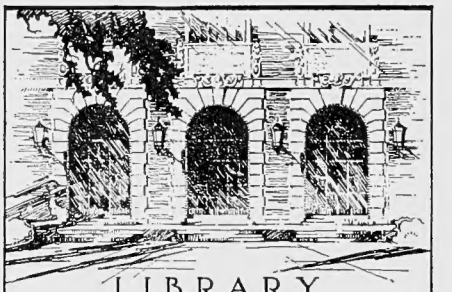

In 7

FOR IMMEDIATE RELEASE April 23, 1965

1965-67

INSECT SURVEY BULLETIN NO. 1

This is the first in a series of weekly bulletins on the general insect situation in Illinois (fruit insects excepted), prepared by entomologists of the University of Illinois College of Agriculture, Illinois Natural History Survey, and cooperating agencies. It is designed to forewarn people in Illinois of impending changes in insect activity and to suggest abbreviated control measures. These reports indicate only general trends. Each individual should check his own fields to determine local conditions.

European corn borer survival over the winter has been at or above normal in all areas. Although the population is no greater than it was a year ago, with the exception of the southern tip counties, the incidence of parasitism and disease among the borers is very low. Therefore, borers are healthy; populations this spring and summer could increase rapidly and damage could be severe. However, strong winds or beating rains when overwintering moths are emerging could still eliminate the problem.

The potentially threatened area lies south and west of a line from Kankakee to Rockford, north and west of a line from St. Louis to Springfield to Hoopeston, and south of a line from Murphysboro to Ridgway. Farmers in these areas should plow cornstalks cleanly, if possible. This will eliminate over 99 percent of the overwintering borers. Thorough disking, or stalk choppers or shredders should be used on stalk fields not plowed. This will eliminate about 92 percent of the overwintering borers. Farmers should avoid early planting particularly on highly fertile soils and use hybrids adapted to their area. Midseason plantings of corn will have less injury from both first- and second-generation corn borer.

Corn soil insects - A broadcast application of 1 1/2 pounds of aldrin or heptachlor, disked in immediately except on dairy farms and fields with northern corn rootworm resistance problems, is more dependable than row treatment. This is particularly true in fields of first-year corn following a grass or legume sod, fields in third-year or more of corn, corn grown in bottomland or having a history of cutworm or other soil insect problems. However, for fields with average infestations of soil insects and without a history of cutworm problems, row treatments with aldrin or heptachlor have been highly satisfactory. No insecticide seed treatment is needed when aldrin or heptachlor is used.

Dairy farmers or farmers having a known or suspected field of resistant northern corn rootworms should use diazinon, phorate parathion, or thiodemeton as granules in the row at planting time. In addition, when a phosphate insecticide is banded, the seed corn itself should be treated with dieldrin or heptachlor to protect against seed-infesting insects.

Alfalfa weevil larvae are feeding on the terminal leaves and this feeding is evident in many fields in the southern two tiers of counties. Alfalfa weevil larvae have a partly black head, feed in the terminals, and are smaller than the clover leaf weevil larvae which have tan heads and hide at the base of the plants during the day.

Overwintering adult alfalfa weevils are laying eggs, so worm feeding will continue for another four to six weeks. At present fields are not seriously affected, but the situation will bear watching.

Some clover leaf weevil larvae are also present, but they are nearly through feeding and beginning to pupate in this area. Collections show that between 20 and 40 percent of these are parasitized by a wasp. Clover leaf weevil populations elsewhere in Illinois remain low and it does not appear that insecticide treatment will be needed.

Fungus flies are appearing in wheat fields, particularly wheat grown on soybean stubble. These small, black, gnat-like flies are developing in wet, decaying organic matter and are usually not pests of the wheat plant.

Armyworm moths are moving northward from states to the south of us. These first moths will lay eggs in grass, fence rows, ditchbanks, roadsides, and pastures where plant growth is thick and rank. It is too soon to predict whether or not armyworms will present a problem.

Face flies are present on cattle in small numbers. These are the overwintering adults leaving their hibernating quarters to begin laying eggs for the first spring generation which will emerge in late May or early June. Cattle pastured near wooded areas generally are more heavily infested at this time than cattle pastured in prairie areas away from woods. In addition to overwintering in homes and farm buildings, some face flies apparently hibernate in wooded areas as well.

Spring cankerworms may appear soon in many areas in trees where tanglefoot bands were not used late this winter to prevent some of the moths from migrating up the trees and laying their eggs. They particularly like American elm and apple trees but will also attack other fruit and shade trees. Many trees may be partly or completely stripped of their new spring foliage by these measuring worms. When full grown the worm drops to the ground by means of a silken thread. In a wind these threads become tangled and appear as streamers, but by this time it is usually too late for control. When the worms are still small (less than one inch), an application of a spray containing 1 1/2 pounds of 80 percent carbaryl wettable powder or 4 pounds of lead arsenate wettable powder per 100 gallons of water will control them.

Caution: Before applying insecticides, read the labels carefully and follow all precautions. This not only will insure personal safety, but will also eliminate residue hazards.

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This weekly report was prepared by H. B. Petty, Steve Moore, Roscoe Randell, and Clarence E. White, Illinois Natural History Survey and University of Illinois College of Agriculture, in cooperation with the USDA Agricultural Service, Plant Pest Control Branch, from information gathered by entomologists and cooperators who send in weekly reports from their own localities.

HBP:SM:RR:CEW:ml
4/23/65

In 7

FOR IMMEDIATE RELEASE April 30, 1965

INSECT SURVEY BULLETIN NO. 2

This is the second in a series of weekly bulletins on the general insect situation in Illinois (fruit insects excepted), prepared by entomologists of the University of Illinois College of Agriculture, Illinois Natural History Survey, and cooperating agencies. It is designed to forewarn people in Illinois of impending changes in insect activity and to suggest abbreviated control measures. These reports indicate only general trends. Each individual should check his own fields to determine local conditions.

Alfalfa weevils are common in alfalfa fields in the extreme southern counties. The larvae resemble the clover leaf weevil which feeds only at night or on cloudy days. However, alfalfa weevil can be readily found feeding on the leaves during the day. The feeding appears as skeletonizing on the new terminal leaves which then dry rapidly and take on a whitish cast. Alfalfa will soon be cut, thus killing many of the worms, but damage on the new shoots may still occur. Feeding will continue for the next few weeks but will start to decline by mid-May. At present we are not recommending an insecticide control program but may have to do so by next year.

Pea aphids are common in many alfalfa fields but not numerous enough to be of economic importance. If weather remains unseasonably cool, aphid parasites and predators will not multiply fast enough to help control these aphids. However, a fungus disease was killing aphids this week. This disease could spread causing an aphid-disease epidemic, and will occur if the weather warms up.

Clover leaf weevil populations are low this spring. This is the green worm with the white or yellow stripe down its back which is found in the debris around clover plants during the day. It feeds on leaves at night or on cloudy days. Furthermore, a parasite present for the past two years has killed many of them. With warm, humid weather, a fungus which attacks this pest will become prevalent. It will infect these larvae and reduce their numbers very rapidly. The rapid growth of alfalfa and red clover is encouraging as it enables plants to recover rapidly from any feeding injury of aphids or clover leaf weevil.

Potato leafhoppers, a pest of alfalfa in Illinois, migrate into the state each year from the south. The first migrant leafhopper was found in Illinois this week.

European corn borers have overwintered successfully and seem to be quite healthy. Between 10 and 20 percent of the wintering borers in southern Illinois pupated this week. Pupation in this area will now proceed rapidly if the weather becomes warmer. No pupation has occurred in other areas of the state.

Armyworm moths have been present for the past 3 weeks. No large numbers have been observed.

Bagworm eggs have overwintered successfully as usual. Right now it is possible to pick these bags off the shrubs and trees; destroy them, as they are full of eggs which will hatch in about 4 weeks. If you hand pick now, you may not have to spray your evergreens for newly hatching bagworms in June.

Elm leaf beetles are annoying to homeowners, particularly in the southern one-half of the state. These 1/4 inch long, smoky, yellow or green beetles are usually found between the storm and inside windows. They have spent the winter in the home and are now moving outside to lay eggs on the leaves of Chinese elm trees. It would help to leave the outer window up so that the beetles have ready access to the outside.

To control elm leaf beetles, brush or spray the inside window casements with either 5 percent DDT or 1/2 percent dieldrin in oil. Once the beetles are found roaming in the house itself use a vacuum cleaner to pick them up or spray them with 0.1 percent pyrethrum from a pressurized spray can.

Caution: Before applying insecticides, read the labels carefully and follow all precautions. This not only will insure personal safety, but will also eliminate residue hazards.

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This weekly report was prepared by H. B. Petty, Steve Moore, Roscoe Randell, and Clarence E. White, Illinois Natural History Survey and University of Illinois College of Agriculture, in cooperation with the USDA Agricultural Service, Plant Pest Control Branch, from information gathered by entomologists and cooperators who send in weekly reports from their own localities.

HBP:SM:RR:CEW:11
4/30/65

(NOT FOR PUBLICATION)

A Special Reminder to Farm Advisers and Assistants:

Special field training meetings on control of alfalfa weevil for county extension workers only will be held as announced at the farm adviser's office at Mounds, Illinois, May 4, and on U. S. 1 at the north edge of Cave-in-Rock on May 5. Both meetings start at 1:00 p.m.

Cooperative Extension Service, University of
Illinois College of Agriculture in Cooperation with
the Illinois Natural History Survey and U.S.D.A.

FOR IMMEDIATE RELEASE May 7, 1965

INSECT SURVEY BULLETIN NO. 3

This is the third in a series of weekly bulletins on the general insect situation in Illinois (fruit insects excepted), prepared by entomologists of the University of Illinois College of Agriculture, Illinois Natural History Survey and cooperating agencies. It is designated to forewarn people in Illinois of impending changes in insect activity and to suggest abbreviated control measures. These reports indicate only general trends. Each individual should check his own fields to determine local conditions.

All stages of alfalfa weevils are now present in extreme southern Illinois. Although some overwintering adults are still depositing eggs on alfalfa stems, larvae are predominant in all fields and pupation is progressing rapidly. Spherical green, silken pupal cases or cocoons can commonly be found; some are attached to leaves but more are found in the crown or in ground debris. A few newly emerged adults are also present.

We are not recommending use of insecticides at this time. Even though we have seen numerous fields where there has been considerable feeding, it is not severe enough to warrant the cost of insecticides. How soon the alfalfa is to be cut for hay is the important control factor. Harvesting of the hay crop will kill many larvae if the sun is bright and hot. If the weather is cool and cloudy, the larvae will be more likely to survive. Eggs now being deposited will probably end up in bales in the barn where they will do little damage. Adults that emerge from this generation will do little feeding and will be inactive throughout the summer.

Heavily infested fields should be cut now. Larvae that survive cutting will feed on the new shoots, so inspect new growth daily for several days after cutting. If weevil larvae concentrate on this new growth and damage is severe, you may want to apply one pound of diazinon or malathion per acre. Allow seven days to elapse between treatment and harvest if diazinon is used; no interval is required with malathion. Both malathion and diazinon will also control pea aphids. However, the need for an insecticide application will be the exception rather than the rule.

Alfalfa weevil has been found for the first time in Randolph, Monroe, St. Clair, Clinton, Cumberland, Shelby, Douglas and Edgar counties.

Pea aphid populations vary greatly from field to field, and many aphids are being killed by wasp parasites. A disease is also killing aphids. Aphid predators, such as larvae and adults of lady beetles, flower fly maggots and aphis lions, are becoming numerous. No fields warranting insecticide treatment have been observed.

Spotted alfalfa aphid is more common in southern and southwestern Illinois this year than in past years but is not present in damaging numbers. Insect predators of pea aphids feed on the spotted aphids, so the buildup of these predators will help to control the spotted aphid.

Newly hatched armyworms were found in spots of luxuriant wheat in some fields of southern and southwestern Illinois this week. It will be at least another week or perhaps two before the population can be assessed correctly. Cool weather will favor this pest.

Chinch bugs are leaving hibernating quarters and will soon concentrate in weak, thin stands of small grains. They will not become established for several days.

Thin stands of small grain as well as rye cover crops will soon be plowed down and planted to corn. Chinch bugs or small armyworms that were feeding on these grain plants will then attack the small corn plants. Be aware of this possibility and check for these pests before plowing down the grain.

Corn borer pupation reached 50 percent in extreme southern Illinois this week. The first moth emergence was also recorded. Thus peak egg laying will probably take place in late May and early June in this area. No pupation has been recorded in other areas of the state.

Caution: Before applying insecticides, read the labels carefully and follow all precautions. This not only will insure personal safety, but will also eliminate residue hazards.

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Special Note to Newspapers and Radio and Television Stations (NOT FOR PUBLICATION)

An early brief summary (1:40) of these weekly newsletters is available each Friday for mass media only. The summary gives only the highlights. We hope you will continue to use these in-depth written reports and will contact your local farm adviser for the local angle. The summary reports are set up on an automatic telephone answering device. These reports can be used as broadcast material (have your recorder running!).

The telephone number is 217 333-2614. There will be three reports. The Friday schedule is as follows: (1) Northern Illinois Farm Insect Report from 9:00 to 10:30 a.m.; (2) Southern Illinois Farm Insect Report from 10:45 a.m. to 12:15 p.m.; and (3) Home and Picnic Insect Report from 1:15 p.m. Friday through Saturday.

For more information on these summary reports, contact the Extension Editorial Office, 330 Mumford Hall, University of Illinois, Urbana. Phone 217 333-1130.

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Prepared by H. B. Petty, Steve Moore, Roscoe Randell and Clarence E. White
Extension Entomologists, University of Illinois College of Agriculture
and Illinois Natural History Survey

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FOR IMMEDIATE RELEASE May 14, 1965

INSECT SURVEY BULLETIN NO. 4

This is the fourth in a series of weekly bulletins on the general insect situation in Illinois (fruit insects excepted), prepared by entomologists of the University of Illinois College of Agriculture, Illinois Natural History Survey and cooperating agencies. It is designated to forewarn people in Illinois of impending changes in insect activity and to suggest abbreviated control measures. These reports indicate only general trends. Each individual should check his own fields to determine local conditions.

Chinch bug adults are common in thin stands of small grains in the area east of a line from Elgin to Peoria to Effingham. They are not yet permanently established but are still moving around in search of a field that is to their liking. If small grains heavily infested with chinch bugs are plowed down and planted to corn, the corn may be injured. Occasional wheat fields are showing damage which appears as small spots of drying plants. Chinch bug adults are mating and starting to lay eggs. The result could be a large buildup of nymphs in the next few weeks.

Warm wet weather is conducive to spread of a fungus that kills chinch bugs and can almost eliminate a large population. In contrast, dry weather and thin stands of grain are favorable to chinch bug development. Do not apply insecticides unless damage is apparent; weather conditions can still control the problem. However, if treatment is definitely necessary, apply 1/4 pound of actual dieldrin per acre or, on dairy farms, 1 pound of actual carbaryl per acre to the grain. Do not harvest dieldrin-treated grain for seven days after treatment, and do not feed straw or ensilage to dairy animals or animals being fattened for slaughter. Do not apply dieldrin to grain fields adjacent to dairy pastures or forage crops. Use carbaryl instead. Do not contaminate fish-bearing waters with dieldrin.

Armyworms are appearing in luxuriant stands of small grains. The worms are still small and are concentrated in thick, rank spots in these fields. Worm numbers have been low, but continued egg-laying and hatch could change the situation rapidly. It is too soon to assess the importance of the problem.

Corn borer pupation is nearly complete in the southern tip of Illinois this week; moth emergence has begun and will progress rapidly during the next two or three weeks. Our best estimate is that peak egg-laying and hatch will occur late this month and into early June. At that time, observe early, rapidly developing fields of corn for borer infestations.

Pupation of overwintering borers reached 15 percent this week in central and western Illinois. Moth emergence should start by June 5 to 10 in this area, with peak egg-laying and hatch between June 15 and 30. There are a few early-planted field in this area that may bear the brunt of the egg-laying, and borer survival in these fields will be high.

The tassel ratio method should be used for correct timing of insecticide applications where they are needed. We prefer diazinon or carbaryl (Sevin) granules in place of DDT.

Wireworms are reported to be damaging corn in some areas. They drill holes in the stalk just below the ground level, or bore directly into the seed itself, and usually kill the plants they attack. If replanting is necessary, either leave the old stand and straddle the rows to replant, or if disking up the old stand, broadcast aldrin or heptachlor at 1-1/2 pounds per acre before disking or apply 1 pound per acre as a row application at planting. Larger wireworms will usually survive broadcast treatments of 1-1/2 pounds of aldrin or heptachlor per acre, while the small, half-grown wireworms will die. If there is a high percentage of larger wireworms, broadcast 3 pounds of aldrin or heptachlor per acre ahead of disking.

Black cutworm moths have been present and laying eggs for the past few weeks. The wet soil in certain areas could cause good survival of newly hatched cutworms and subsequent damage to newly emerging corn plants. Preplanting broadcast applications of 1-1/2 pounds of actual aldrin or heptachlor per acre, disked in immediately, is the best protection against cutworms. Row applications of soil insecticides at planting time have failed to control this insect satisfactorily. Be on the watch for cutworms in corn for the next few weeks, particularly in low or poorly drained spots in fields.

Flea beetles are feeding on corn in some areas. No damage has been observed. However, if there are fields where plants are being killed, apply 1-1/2 pounds of toxaphene or, for dairy farms, 3/4 pound of carbaryl per acre as a band over the row. Newly emerged alfalfa weevil adults are now appearing in alfalfa fields in southern Illinois. These adults will feed for about two weeks and then become inactive through the summer. Most of the remaining larvae are nearly fully grown and ready to pupate, although some small worms are still present. In addition, overwintering adults are still laying some eggs.

Alfalfa fields in the threatened area (southern two tiers of counties) are being cut or will be cut soon. Cutting will kill many of the larvae. However, after cutting, watch the new growth for possible injury from surviving larvae. If 20 percent of the new growth terminals show feeding damage, treatment may be justified. Use 1 pound of either malathion or diazinon per acre. Allow seven days to elapse between treatment and harvest if diazinon is used; no interval is required with malathion.

Spittlebugs averaged two per stem in some clover and alfalfa fields in extreme northwestern Illinois this week. For maximum hay yields, the time to apply insecticides is now. To determine the need for treatment, carefully examine 10 stems of clover or alfalfa in each of five places in a field. Examine leaf sheaths, folded leaves and stems for the tiny yellow to orange nymphs that will be in tiny droplets of froth. For chemical control to be profitable, you should find an average of at least one nymph per stem. If plants are taller than 10 to 12 inches, treatments may not be successful. However, if insecticides are justified, apply 1 pound of actual methoxychlor per acre, and allow one week to elapse between application and harvest or grazing.

Mosquitoes have already been troublesome in many areas of the state. To reduce the mosquito nuisance around your home, follow these suggestions: (1) Eliminate standing water such as accumulates in eave troughs, old tires, cans, children's toys, etc. (2) Spray the shrubbery and tall grass with 1.0 percent malathion. To mix, use 3 ounces of 50-57 percent malathion emulsion concentrate per gallon of water. Repeat the application every week or two if necessary. (3) Keep screening on all doors and windows in good repair. In addition, hang a plastic resin strip (2" x 10")

containing 20 percent dichlorvos (DDVP) at the rate of one strip per 1,000 cubic feet or about one per room. These strips are effective for six to eight weeks. The dichlorvos vaporizes slowly and kills mosquitoes and flies. They are safe to use around children and pets. A 0.1 percent pyrethrin space spray or fog may be used in the house for quick knockdown in place of the dichlorvos resin strips. Repeat treatments will be needed with the spray. (4) When entering mosquito-infested areas, apply a repellent to exposed parts of the body. The best mosquito repellent to use is DEET (diethyl toluamide).

Caution: Before applying insecticides, read the labels carefully and follow all precautions. This not only will insure personal safety, but will also eliminate insecticide residue hazards.

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Special Reminder to Farm Advisers and Assistants (NOT FOR PUBLICATION)

A special field training meeting on corn borer identification and damage for you and your dealer guests will be held at the farm adviser's office at Mounds, Illinois, Tuesday, May 18, beginning at 1:00 p.m.

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Prepared by H. B. Petty, Steve Moore, Roscoe Randell and Clarence E. White
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and Illinois Natural History Survey

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FOR IMMEDIATE RELEASE May 21, 1965

INSECT SURVEY BULLETIN NO. 5

This is the fifth in a series of weekly bulletins on the general insect situation in Illinois (fruit insects excepted), prepared by entomologists of the University of Illinois College of Agriculture, Illinois Natural History Survey and cooperating agencies. It is designed to forewarn people in Illinois of impending changes in insect activity and to suggest abbreviated control measures. These reports indicate only general trends. Each individual should check his own fields to determine local conditions.

Corn borer pupation is complete in the southern six to 10 Illinois counties; 50 percent of the moths have already emerged, and egg laying has started. Advanced fields had a maximum of one egg mass per plant this week. Egg laying will continue for two weeks, taper off and be complete in three weeks. After most of the eggs have hatched, decide whether an insecticide application will be profitable. Only the earliest fields will warrant use of insecticide.

To decide whether an insecticide can be profitably applied, measure the tassel ratio of the field and count the percent of plants with recent whorl leaf feeding. To determine the tassel ratio, measure the height of the plant with leaves extended; split the stalk open and measure from the tip of the developing tassel to the base of the plant. Divide the tassel height by the plant height, and multiply by 100. This figure is the tassel ratio. If the tassel ratio is at least 35 (preferably 40 to 45) and at least 75 percent of the plants show recent whorl feeding, then treatment is justified. Use 1 pound of actual diazinon in granular form per acre or 1 1/2 to 2 pounds of carbaryl (Sevin) as granules. For spraying, use the same amount of actual insecticide per acre, and direct the spray to the upper third of the plant. Aerial applications should be granules, not sprays or dusts. Follow the label precautions in harvesting and feeding treated corn. DDT can be used as granules or sprays, but not on or adjacent to dairy farms.

In central and northern Illinois, 10 to 50 percent of the overwintering borers have pupated, but no emergence of consequence is expected for at least 10 days or perhaps two weeks. In general, except for an occasional early field, borer development is ahead of corn development. Borer moths may concentrate in extremely advanced corn in the area north and west of a line from St. Louis to Springfield to Hoopeston and south of a line from Kankakee to Rockford. Starting in mid-June, be prepared to examine these fields regularly.

Armyworm populations do not approach those of last year, but the worms are still very small in most fields and some eggs are still hatching. Only an occasional field of extremely luxuriant wheat in the southern half of the state has enough worms to warrant application of an insecticide. Fields of wheat averaging one or two armyworms per linear foot of drill row are not uncommon throughout this area, but this population neither requires the use of an insecticide nor can it be justified unless the worms concentrate on cutting heads.

To warrant treatment, you should find a minimum of six worms per linear foot.

Use 1 1/2 pounds of toxaphene per acre, but not on dairy farms or fields adjacent to dairy pasture or forage crops. If you use dieldrin, do not apply more than two ounces of actual per acre, and do not apply on dairy farms or fields adjacent to dairy forage crops or pasture. Do not harvest for one week or use the straw for livestock feed. Trichlorfon (Dylox) has label approval for use on wheat, but can not be used within 21 days of harvest, the field can not be used for grazing livestock and the straw can not be fed to dairy or beef animals. We have not tried it for armyworm control in Illinois, so we have no records on its effectiveness, but some states are recommending its use for this purpose.

The best advice about armyworms is not to panic and let anyone talk you into applying an insecticide unless you have actually counted the worms in several areas of the field. Also, remember that armyworms will be present in large numbers in lodged spots in grain fields and may be difficult to find in the remainder of the field.

Sawflies are yellowish-green, velvety, transparent-appearing worms. They are abundant in wheat fields at the same time as armyworms, which are distinctly striped. Do not confuse the sawfly larvae with armyworms.

Black cutworms have been found in low, wet areas of many cornfields throughout eastern, central and western Illinois. Most of them are small to half grown, but some are still hatching. In a few instances they have been serious enough to cause replanting even where fields have had a broadcast treatment of soil insecticide. But most of the small corn plants are cut off above the growing point or heart and will recover from the damage.

If post-planting treatment is needed, use either 1/2 pound of actual dieldrin or 3 pounds of actual toxaphene. Do not use dieldrin or toxaphene on dairy farms or allow the drift to reach dairy pastures or hay crops. For dairy farms, use 2 pounds of actual carbaryl per acre. It will be helpful, but not highly satisfactory. If replanting is necessary, apply a broadcast application of a soil insecticide. Row applications of soil insecticides at planting time have failed to control cutworms.

Chinch bug adults are in thin stands of wheat in eastern and central Illinois. In some fields 10 to 50 adults can be found per linear foot of drill row. Much of the wheat in this area is winter-damaged; as a result, some fields have been plowed under and planted to corn. Some eggs have been laid and could produce a large buildup of nymphs, which may appear in wheat or on corn planted where wheat has been plowed under. Dry weather is favorable for chinch bug development. Do not apply insecticides unless damage is being caused by the new hatching nymphs.

Flea beetles are still present in cornfields in the southern half of Illinois, but corn is growing away from the damage and the beetle numbers are diminishing.

Alfalfa weevil larval populations are decreasing rapidly, and damage is almost over. Adults that are now emerging will feed a little and then hibernate until next spring.

This week we found alfalfa weevil for the first time in Champaign, Coles, Macon, Moultrie, Christian, Montgomery, Bond and Madison counties.

Potato leafhoppers migrated into the state this week and can be found in numbers in alfalfa fields north of a line from St. Louis to Champaign up to Route 6. No control measures other than early cutting are recommended.

Sod webworms are occasionally being reported from lawns. Generally no control is needed until July or August. However, if control is needed now, use diazinon or carbaryl.

Bagworms will be hatching in another week in southern Illinois. Now is the time to hand-pick the bags that overwintered on the trees. They are full of eggs. A thorough job of hand-picking may eliminate the need for a spray. If, however, it becomes necessary to spray, apply carbaryl, diazinon, lead arsenate or malathion early while the newly hatched worms are still small and easy to kill.

Cereal leaf beetle was found in Illinois for the first time this week. No control is recommended at this time.

Caution: Before applying insecticides, read the labels carefully and follow all precautions. This not only will insure personal safety, but will also eliminate residue hazards.

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Farm Advisers' Special Notice (NOT FOR PUBLICATION)

We will meet at the following farm advisers' offices, at 1:00 p.m. on the dates listed, for field meetings on chinch bugs and other current insect pests:

June 1 - Tuscola

June 2 - Clinton

June 3 - Watseka

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Prepared by H. B. Petty, Steve Moore, Roscoe Randell and Clarence E. White
Extension Entomologists, University of Illinois College of Agriculture
and Illinois Natural History Survey

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In 7'

Cooperative Extension Service, University of
Illinois College of Agriculture in Cooperation With
the Illinois Natural History Survey and U.S.D.A.

FOR IMMEDIATE RELEASE May 28, 1965

INSECT SURVEY BULLETIN NO. 6

This is the sixth in a series of weekly bulletins on the general insect situation in Illinois (fruit insects excepted), prepared by entomologists of the University of Illinois College of Agriculture, Illinois Natural History Survey and cooperating agencies. It is designed to forewarn people in Illinois of impending changes in insect activity and to suggest abbreviated control measures. These reports indicate only general trends. Each individual should check his own fields to determine local conditions.

Armyworms continue to hold the spotlight. However, only a very few fields have enough worms to justify treatment.

Here is what has happened: Moths were depositing eggs a few weeks ago and searched out the luxuriant stands of grains and grasses. Such fields were few and far between, but they now have 6 to 15 worms per linear foot of drill row and can be treated profitably.

The moths also deposited some eggs in other fields of wheat. You can find armyworms in small, thick spots in each field. In some cases there are as many as 2 per linear foot throughout the field. These populations do not warrant applications of insecticides.

In the larger populations, examine worms carefully for signs of disease. Sick worms respond very slowly to any stimulus, such as heat. Their skin may break with a slight touch. After death they soon shrivel up. If there are many sick worms, do not apply an insecticide.

Above all, do not panic and be talked into using an insecticide unnecessarily. Do not justify insecticide applications on the basis of worm counts from lodged spots in fields, as the worms concentrate in these spots. Use an average worm count for the entire field to determine need for treatment.

Use 1 1/2 pounds of toxaphene per acre, but not on dairy farms or fields adjacent to dairy pasture or forage crops. If you use dieldrin, do not apply more than two ounces of actual per acre, and do not apply on dairy farms or fields adjacent to dairy forage crops or pasture. Do not harvest for one week, and do not use the straw for livestock feed. Trichlorfon (Dylox) has label approval for use on wheat, but it cannot be used within 21 days of harvest, the field cannot be used for grazing livestock and the straw cannot be fed to dairy or beef animals. We have not tried this material for armyworm control in Illinois, so we have no records on its effectiveness, but some states are recommending its use for this purpose. Also, 1 1/4 pounds of malathion can be used up to within one week of wheat harvest and may be helpful in controlling armyworms on dairy farms.

Sawflies are yellowish-green, velvety, transparent-appearing worms. They are abundant in wheat fields at the same time as armyworms, which are distinctly striped. Do not confuse the sawfly larvae with armyworms.

Black cutworms are very severe in many fields of corn throughout central and south-central Illinois. They are generally found in fields where no soil insecticides were used prior to planting, but they are also commonly found in fields where insecticides were applied in the row at planting. Also, there have been numerous reports of cutworm outbreaks in fields where the soil insecticide was broadcast and disked in prior to planting.

The worms vary in size, but most of them are more than half grown and will mature within 10 days. There is usually not another generation in the same locality, but one can develop as it did in 1958, when moths of the first generation remained and did not migrate northward. Continued rains with wet spots in fields in about two weeks could prove attractive to the newly emerging moths for laying eggs.

If post-planting treatment is needed, use either 1/2 pound of actual dieldrin or 3 pounds of actual toxaphene. Do not use dieldrin or toxaphene on dairy farms or allow the drift to reach dairy pastures or hay crops. For dairy farms, use 2 pounds of actual carbaryl per acre. It will be helpful, but not highly satisfactory. If replanting is necessary, apply a broadcast application of a soil insecticide.

In general, surface applications of dieldrin or toxaphene may vary in effectiveness from no control to perfect control. The results will depend upon soil moisture at spraying, or on rain immediately after spraying. If it is dry, the worms will be several inches deep in the ground and the spray will stay on the surface--thus no kill.

Corn borer emergence should be nearing completion in the southern tip of Illinois. This week will be the time to decide whether it will pay to apply an insecticide to the earliest and most mature corn.

To decide whether an insecticide can be profitably applied, measure the tassel ratio of the field and count the percent of plants with recent whorl leaf feeding. To determine the tassel ratio, measure the height of the plant with leaves extended; split the stalk open and measure from the tip of the developing tassel to the base of the plant. Divide the tassel height by the plant height, and multiply by 100. This figure is the tassel ratio. If the tassel ratio is at least 35 (preferably 40 to 45) and at least 75 percent of the plants show recent whorl feeding, then treatment is justified. Use 1 pound of actual diazinon in granular form per acre or 1 1/2 to 2 pounds of carbaryl (Sevin) as granules. For spraying, use the same amount of actual insecticide per acre, and direct the spray to the upper third of the plant. Aerial applications should be granules, not sprays or dusts. Follow the label precautions in harvesting and feeding treated corn. DDT can be used as granules or sprays, but not on or adjacent to dairy farms.

In northern, northwestern and western Illinois, pupation of overwintering borers ranges from 50 to 95 percent, with an occasional moth already emerged. Borer development is normal for this area, but corn development is slightly later than in the past few years. Egg laying will start in the next few weeks. Be prepared to examine those exceptionally early fields from mid-June to July 4.

Chinch bug populations in eastern and central Illinois may have been greatly affected by the rains, but the extent cannot be determined for another week.

Alfalfa weevil has now been found in Vermilion county.

Spider mite injury has been appearing on evergreens, especially in foundation plantings around homes. These minute eight-legged mites are usually red spider mites, spruce spider mites or some similar form. The evergreens will show pale patches and even some killing of branches. Silken threads of webbing are usually present. For positive detection, hold a sheet of white paper or white dish under a branch and shake the branch sharply. If spider mites are present, you will be able to see them moving about on the white background. Three miticides, Aramite, dicofol (Kelthane) or chlorobenzilate, will give control. Malathion can also be used. Thorough spray coverage is important.

Caution: Before applying insecticides, read the labels carefully and follow all precautions. This not only will insure personal safety, but will also eliminate residue hazards.

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Special Note to Careless Sprayers (NOT FOR PUBLICATION)

You are not listening to warnings. Therefore, please give the following message to your family doctor.

Some orchardists, commercial vegetable gardeners and custom sprayers are complacent and careless. They no longer respect certain highly toxic organic phosphates, since they have used them for some time with no trouble. Among these organophosphates are the parathions, azinphosmethyl (Guthion), the demetons (Systox and Di-Syston), phorate (Thimet) and others.

We say to wear rubber or plastic gloves and other protective clothing when handling and mixing these concentrates. Some people are handling them bare-handed and then even rolling cigarettes. They are also disregarding other precautions listed on the container.

Doctor, when your patient arrives, decontaminate him with soap and water and inject (severe cases) atropine sulfate. Underdosing has failed. The Clinical Handbook of Economic Poisons says one treatment to use in severe cases is "Atropine sulfate, 2 to 4 mg. (1/30 to 1/15 grain) intravenously as soon as cyanosis is overcome. Repeat at 5- to 10-minute intervals until signs of atropinization appear (dry, flushed skin and tachycardia as high as 140 per minute)."

We have had four suspected (not confirmed) cases of minor symptoms reported to us this week. If you want to be careless, that is up to you. But please give your doctor the above information first.

Farm Advisers' Special Notice (NOT FOR PUBLICATION)

We will meet at the following farm advisers' offices, at 1:00 p.m. on the dates listed, for field meetings on chinch bugs and other current insect pests:

June 1 - Tuscola
June 2 - Clinton
June 3 - Watseka

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Prepared by H. B. Petty, Steve Moore, Roscoe Randell and Clarence E. White
Extension Entomologists, University of Illinois College of Agriculture
and Illinois Natural History Survey

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FOR IMMEDIATE RELEASE June 4, 1965

INSECT SURVEY BULLETIN NO. 7

This is the seventh in a series of weekly bulletins on the general insect situation in Illinois (fruit insects excepted), prepared by entomologists of the University of Illinois College of Agriculture, Illinois Natural History Survey and cooperating agencies. It is designated to forewarn people in Illinois of impending changes in insect activity and to suggest abbreviated control measures. These reports indicate only general trends. Each individual should check his own fields to determine local conditions.

Chinch bug adults prefer open thin stands of grain; they have had a wide selection of fields this year and until recently they were diluted over a large acreage. But as growth continued and the ground became more shaded, the adults moved to field borders, low spots, drill skips, and other thin open spots. Here they have been laying eggs. In most instances the newly hatched nymphs are being killed by beating rains. As the adults die and the rains kill the tiny nymphs, our chinch bug potential problem decreases. There undoubtedly are isolated areas that were missed by the recent rains. In these areas chinch bugs may be a problem, and migrations from grain to corn may take place later.

Corn borer egg-laying is complete in the southernmost counties. Counts indicate that 1 to 3 percent of the fields in the southern tip of the state would profit from protection. These, of course, are the most advanced fields. If a field indicates a need for insecticide protection, now is the time.

To decide whether an insecticide can be profitably applied, measure the tassel ratio of the field and count the percent of plants with recent whorl leaf feeding. To determine the tassel ratio, measure the height of the plant with leaves extended; split the stalk open and measure from the tip of the developing tassel to the base of the plant. Divide the tassel height by the plant height, and multiply by 100. This figure is the tassel ratio. If the tassel ratio is at least 35 (preferably 40 to 45) and at least 75 percent of the plants show recent whorl feeding, then treatment is justified. Use 1 pound of actual diazinon in granular form per acre or 1 1/2 to 2 pounds of carbaryl (Sevin) as granules. For spraying, use the same amount of actual insecticide per acre, and direct the spray to the upper third of the plant. Aerial applications should be granules, not sprays or dusts. Follow the label precautions in harvesting and feeding treated corn. DDT can be used as granules or sprays, but not on or adjacent to dairy farms.

In northwestern and western Illinois, pupation is rapidly nearing completion. In some instances up to 50 percent of the moths have emerged. However, some of the wintering larvae have not yet pupated. This means that some moths will still be laying eggs four weeks from now. In the meantime, carefully examine the most mature fields. Need for insecticide protection may be apparent in two to three weeks.

Black cutworms are causing the most serious insect problem this week. We continue to have reports from south-central Illinois and have also had calls from the northern tier of counties. Control of this pest has been erratic.

In general, farmers who used 1 1/2 pounds of aldrin or heptachlor per acre broadcast and disked it in prior to planting have escaped serious damage. But we have had a few complaints that even the pre-planting broadcast treatment failed to control cutworms in extremely severe infestations. As usual we have had many complaints that row or band treatment at planting has not controlled the cutworms.

In estimating damage, remember that over half of the damaged small plants will recover rapidly, as they are usually cut off above the growing point. Only when they are cut off below the growing point will they die. Worms that are 1/4 to 1/2 inch long will feed for another 7 to 10 days; worms 1 1/2 to 2 inches long have almost finished feeding. Base the need for protective treatment on the damage, location of growing point in relation to cut on plant, and length of time the worms will continue to cut.

If post-planting treatment is needed, use either 1/2 pound of actual dieldrin or 3 pounds of actual toxaphene. Concentrate the spray at the base of the plants. The more water you use per acre, the better the results will be. If possible, cultivate immediately to cover the spray deposit. Do not use dieldrin or toxaphene on dairy farms or allow the drift to reach dairy pastures or hay crops. For dairy farms, use 2 pounds of actual carbaryl per acre. It will be helpful, but not highly satisfactory. If replanting is necessary, apply a broadcast application of a soil insecticide.

In general, surface applications of dieldrin or toxaphene may vary in effectiveness from no control to perfect control. The results will depend to some extent upon soil moisture at spraying, or on rain immediately after spraying. If it is dry, the worms will be several inches deep in the ground, and the spray will stay on the surface--thus no kill.

Armyworms are still present, but the need for treatment is rapidly decreasing. In general, only occasional fields warrant treatment, and even here the worms are rapidly approaching maturity. Parasites are also rapidly increasing in number and are killing worms before they get large enough to do severe damage. Armyworm and cutworm development during the next two weeks will be important. Cool, wet weather may tempt the moths to stay where they are rather than to migrate northward. This remains to be seen.

Sod webworm moths are abundant in east-central Illinois. We are not encouraging use of insecticides at this time, but if the moths are extremely thick in your yard, watch carefully for signs of damage. If treatment is needed, use carbaryl or diazinon.

Caution: Before applying insecticides, read the labels carefully and follow all precautions. This not only will insure personal safety, but will also eliminate residue hazards.

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Special Note to Careless Sprayers (NOT FOR PUBLICATION)

Some of you may want your family doctor to have more information on treatment of organic phosphate poisoning and description of symptoms. After all, they do resemble such illnesses as heat exhaustion and many others. We suggest that you

order him a copy of "Clinical Handbook on Economic Poisons." It is Public Health Service Publication No. 476. Send 55 cents to the U. S. Government Printing Office, Washington, D. C., along with your order.

Farm Advisers' Special Notice (NOT FOR PUBLICATION)

Special corn borer and corn earworm meetings for farm advisers and insecticide dealers:

June 21 - Watseka
- Jacksonville

June 22 - Monmouth
- Eureka
- Edwardsville

June 23 - Morrison
- DeKalb

Meet at the farm adviser's office at 1:00 p.m.

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Prepared by H. B. Petty, Steve Moore, Roscoe Randell and Clarence E. White
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FOR IMMEDIATE RELEASE June 11, 1965

INSECT SURVEY BULLETIN NO. 8

This is the eighth in a series of weekly bulletins on the general insect situation in Illinois (fruit insects excepted), prepared by entomologists of the University of Illinois College of Agriculture, Illinois Natural History Survey and cooperating agencies. It is designed to forewarn people in Illinois of impending changes in insect activity and to suggest abbreviated control measures. These reports indicate only general trends. Each individual should check his own fields to determine local conditions.

European corn borer pupation is complete except in extreme northern Illinois, where 10 to 15 percent of the overwintering larvae will not emerge as moths until late June or early July. Here moth emergence and egg laying will cover an extended period. However, in this area moth emergence now varies from 20 to 60 percent, with an average of about 50 percent. In north-central Illinois, emergence ranges from 50 to 75 percent; in central Illinois, from 70 to 90 percent.

A few egg masses can be found on the most advanced corn throughout the northern one-half to two-thirds of Illinois. This week we did not find fields warranting protective insecticide applications in the triangular area from St. Louis to Springfield to Quincy. In this area many fields of corn are suitable for egg laying; thus egg laying will be scattered, with no high concentrations expected in any field. In the area north of the Springfield-Quincy line to a line from Rock Island to Kankakee, borer eggs can be found, but not in any large numbers. North of this line, egg laying has just started.

In general, borer development this year closely parallels that of 1955 and 1960, but corn development is slightly slower. The less mature the corn, the lower the borer survival. Thus survival of borers should be low this year. In addition, the rains and windstorms have probably killed many moths before they laid eggs. Even though weather conditions of the next two weeks may be critical in determining the corn borer potential, we now feel that the threat is not so great as it was a few weeks ago. It should be apparent in the next three weeks whether it will be necessary to use an insecticide to protect a field.

To decide whether an insecticide can be profitably applied, measure the tassel ratio of the field and count the percent of plants with recent whorl leaf feeding. To determine the tassel ratio, measure the height of the plant with leaves extended; split the stalk open and measure from the tip of the developing tassel to the base of the plant. Divide the tassel height by the plant height, and multiply by 100. This figure is the tassel ratio. If the tassel ratio is at least 35 (preferably 40 to 45) and at least 75 percent of the plants show recent whorl feeding, then treatment is justified. Use 1 pound of actual diazinon in granular form per acre or 1 1/2 to 2 pounds of carbaryl (Sevin) as granules. For spraying, use the same amount of actual insecticide per acre, and direct the spray to the upper third of the plant. Aerial applications should be granules, not sprays or dusts. Follow the label precautions in harvesting and feeding treated corn. DDT can be used as granules or sprays, but not on or adjacent to dairy farms.

Black cutworms continue to be a problem in cornfields in the northern one-third to one-half of the state. In estimating damage, remember that over half of the damaged small plants will recover rapidly, as they are usually cut off above the growing point. Only when they are cut off below the growing point will they die. Make counts to determine stand losses. Worms that are 1/4 to 1/2 inch long will feed for another 7 to 10 days; worms 1 1/2 to 2 inches long have almost finished feeding. Base the need for protective treatment on the damage, location of growing point in relation to cut on plant, and length of time the worms will continue to cut. If post-planting treatment is needed, use either 1/2 pound of actual dieldrin or 3 pounds of actual toxaphene. Concentrate the spray at the base of the plants. The more water you use per acre, the better the results will be. If possible, cultivate immediately to cover the spray deposit. Do not use dieldrin or toxaphene on dairy farms or allow the drift to reach dairy pastures or hay crops. For dairy farms, use 2 pounds of actual carbaryl per acre. It will be helpful, but not highly satisfactory. If replanting is necessary, apply a broadcast application of a soil insecticide.

Do not expect a spectacular kill of cutworms overnight. Compute control three or four days after treatment. Do not look for dead worms, since they soften and disintegrate rapidly as soon as they die. You may find only a spot of slimy mud where a dead worm has been. Evaluate kill of cutworms by new damage and presence of live worms.

Sod webworm damage to corn appears in cutting of the plants or ragging of the leaves. These worms are common in corn after grass sods. Close examination of damaged plants will show webbing, and in a webbed-up mass of dirt you will find a spotted, gray to brown worm. If an insecticide spray is indicated, use toxaphene or carbaryl. It is doubtful that control will be required at this late date.

Southern corn rootworm adults seem to be more numerous in cornfields than in the past few years. This insect is also called the spotted cucumber beetle. It migrates from the south and deposits eggs in cornfields. The white larvae that hatch from these eggs feed on the roots of the corn. If infestations are severe and the roots are destroyed, the plants will tip over. Do not confuse this pest with the northern corn rootworm, which winters in Illinois and is a root pest of continuous corn.

Controls are not recommended for either of these pests at this time.

Chinch bugs are still hatching, but the beating rains are continuing to kill them. However, in the eastern Illinois area from Joliet to Bloomington to Paris, examine thin stands of grain, particularly in areas missed by the continual hard rains of the past two weeks.

Potato leafhoppers have been abundant in some fields of alfalfa, particularly those that are being cut late. The damage shows in yellowing of the leaves and is usually quite apparent. The tiny wedge-shaped, fast-moving green insects can be found by shaking the plants over a piece of paper. No control is recommended.

Bean leaf beetles are feeding on soybeans. We have an occasional report of severe defoliation. If it is necessary to protect the stand, apply toxaphene or carbaryl.

Sod webworms in lawns are a common topic. The moths now flying will deposit eggs in the sod. But in general fertility and moisture will enable the grass to grow faster than the worms can eat it. In July and August a new generation will be present and the growing conditions will be less favorable. At that time the webworms will damage the sod. Plan to treat with diazinon or carbaryl in the forepart of July if inspection reveals tiny worms, but do not treat after the worms are full grown and the damage is already done.

Caution: Before applying insecticides, read the labels carefully and follow all precautions. This not only will insure personal safety, but will also eliminate residue hazards.

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Farm Advisers' Special Notice (NOT FOR PUBLICATION)

Special corn borer and corn earworm meetings for farm advisers and insecticide dealers:

June 21 - Watseka
- Jacksonville

June 22 - Monmouth
- Eureka
- Edwardsville

June 23 - Morrison
- DeKalb

Meet at the farm adviser's office at 1:00 p.m.

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Prepared by H. B. Petty, Steve Moore, Roscoe Randell and Clarence E. White
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FOR IMMEDIATE RELEASE June 18, 1965

INSECT SURVEY BULLETIN NO. 9

This is the ninth in a series of weekly bulletins on the general insect situation in Illinois (fruit insects excepted), prepared by entomologists of the University of Illinois College of Agriculture, Illinois Natural History Survey and cooperating agencies. It is designed to forewarn people in Illinois of impending changes in insect activity and to suggest abbreviated control measures. These reports indicate only general trends. Each individual should check his own fields to determine local conditions.

European corn borer moths have been somewhat inactive because of cool temperatures. They have remained in weed patches and other protected areas. With the first warm, calm nights, moths will become active and deposit eggs. During the past week, the corn has been growing and is now becoming more favorable for borer survival.

Apparently egg laying is nearly complete south of a line from Carthage to Macomb to Champaign. From 25 to 50 percent of the corn in much of this area is now acceptable to moths for egg laying. Thus the few eggs yet to be laid will be scattered over many fields rather than concentrated in a few.

From this line north to a line from Rock Island to LaSalle, moth emergence is practically complete, but a few moths will be laying eggs until about July 1. In many areas there is no early corn; here borers will lay eggs on the short corn, weeds, flowers and small grains, and survival will be low. But in other localities some fields are much more mature than others in the vicinity. Watch these fields, as moths may concentrate their egg laying here.

In the area north of the line from Rock Island to LaSalle, there are still some moths to emerge and egg laying will probably continue until July 4. Although the situation does not appear serious, observe the most advanced fields closely for the next two weeks.

To decide whether an insecticide can be profitably applied, measure the tassel ratio of the field and count the percent of plants with recent whorl leaf feeding. To determine the tassel ratio, measure the height of the plant with leaves extended; split the stalk open and measure from the tip of the developing tassel to the base of the plant. Divide the tassel height by the plant height, and multiply by 100. This figure is the tassel ratio. If the tassel ratio is at least 35 (preferably 40 to 45) and at least 75 percent of the plants show recent whorl feeding, then treatment is justified. Use 1 pound of actual diazinon in granular form per acre or 1 1/2 to 2 pounds of carbaryl (Sevin) as granules. For spraying, use the same amount of actual insecticide per acre, and direct the spray to the upper third of the plant. Aerial applications should be granules, not sprays or dusts. Follow the label precautions in harvesting and feeding treated corn. DDT can be used as granules or sprays, but not on or adjacent to dairy farms.

Black cutworms continue to be a problem in north-central Illinois, and we have had occasional reports of this pest from northern Illinois. Continue to watch for spots in fields where stands suddenly appear thin. Look for signs of this pest cutting off the corn.

Over half of the plants cut off above the growing point will live; plants cut off below the growing point will die. If post-planting treatment is needed, use either 1/2 pound of actual dieldrin or 3 pounds of actual toxaphene. Concentrate the spray as a band at the base of the plants. The more water you use per acre, the better the results will be. If possible, cultivate immediately to cover the spray deposit. Do not use dieldrin or toxaphene on dairy farms or allow the drift to reach dairy pastures or hay crops. For dairy farms, use 2 pounds of actual carbaryl per acre. It will not be as effective as diedrin or toxaphene, but it should be of some help in controlling cutworms.

Chinch bug nymphs can be found in thin stands of grain in a few east-central Illinois areas as far north as Joliet. They can also be found occasionally in cornfields where grain or grass was plowed down just before the corn was planted. So far these infestations are limited to areas where there has been comparatively little rain during the past weeks.

If migration from small grain to corn appears imminent, you can apply 1/2 pound of dieldrin per acre as a barrier treatment. Apply it to a strip two rods into the grain and the same distance into the corn just as migration begins. Do not apply within one week of harvest.

Dairy farmers should not use diedrin but might try one pound of carbaryl per acre on the corn. Direct the spray to the bottom half of the plants. Repeat applications may be needed during migration. The results will not be so satisfactory with carbaryl as with dieldrin.

Grape colaspis larvae are the small comma-shaped grubs often found on corn planted after clover or lespedeza. These worms eat the roots, causing the corn leaves to turn purple, a phosphate deficiency symptom. Damage has appeared on occasional fields this year; the larvae are almost full-grown, and plants should soon be growing away from the effects of this root pruning.

White grubs eating the roots of corn present an even more difficult control problem than the black cutworm. If you want to attempt control, apply 2 to 3 pounds of aldrin or heptachlor as a spray directly to the base of the corn plants. Cultivate immediately, throwing dirt up around the plants. This treatment will be only partly effective, but it may kill enough grubs to prevent severe damage and thus allow the plants to partly recuperate.

Grasshoppers are now hatching. Hard, beating rains kill the tiny 'hoppers, but hatch will continue for about three more weeks and some undoubtedly will survive.

Although we are not expecting any severe or widespread grasshopper infestation, we know that some localized infestations may be severe. Since grasshoppers are usually concentrated in these small spots, they can be easily controlled now with a minimum amount of insecticide. If you observe high concentrations of small 'hoppers, apply 3/4 pound of carbaryl, 1/2 pound of diazinon, 1 pound of malathion or 3/4 pound of naled per acre. Follow time intervals between application and crop harvest as listed on labels.

Seed corn maggots have been reported from one field of soybeans. This maggot drills into the bean seed or into the tender sprout. Damage is most noticeable when corn or soybeans germinate slowly. It is usually too late for control by the time it is discovered.

Clover root curculios and clover leaf weevil adults are brown or gray snout beetles that often eat small soybean plants. This damage occurs to beans planted after clovers or beans in marginal rows next to a clover field that has been recently plowed. If needed, use 1 1/2 pounds of toxaphene per acre as a spray. Other insecticides may be equally effective.

Caution: Before applying insecticides, read the labels carefully and follow all precautions. This not only will insure personal safety, but will also eliminate residue hazards.

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Farm Advisers' Special Notice (NOT FOR PUBLICATION)

Special corn borer and corn earworm meetings for farm advisers and insecticide dealers:

June 21 - Watseka
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Meet at the farm adviser's office at 1:00 p.m.

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Prepared by H. B. Petty, Steve Moore, Roscoe Randell and Clarence E. White
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FOR IMMEDIATE RELEASE June 25, 1965

INSECT SURVEY BULLETIN NO. 10

This is the tenth in a series of weekly bulletins on the general insect situation in Illinois (fruit insects excepted), prepared by entomologists of the University of Illinois College of Agriculture, Illinois Natural History Survey and cooperating agencies. It is designed to forewarn people in Illinois of impending changes in insect activity and to suggest abbreviated control measures. These reports indicate only general trends. Each individual should check his own fields to determine local conditions.

European corn borer is less important now than it was last week. The storms of the past week killed many moths, especially through the central and north-central sections. Only those moths in highly protected areas were able to survive. Moth emergence is complete except north of Interstate 80, where a few pupae remain.

In the area south of Route 136, egg laying is complete, and even the more advanced fields show only a light incidence of corn borer. It is unlikely that chemical control will be needed in this area.

In the area between Route 136 and Interstate 80, the percentage of fresh eggs is small, but a few eggs will still be laid next week. However, because a higher percentage of the corn is acceptable to moths for egg laying, the eggs will be scattered over many fields rather than concentrated in a few. Occasional fields in this area may justify treatment.

In the area north of Interstate 80, egg laying will continue for another 10 days to two weeks. In general, corn growth here is below normal, so borer survival will be low. Occasional early-planted fields show economic infestations. Watch these early-planted, more mature fields (over 50 inches), as moths will concentrate their egg laying here.

First-generation corn borers are beginning to pupate in extreme southern Illinois. Three generations could occur in this section this year.

To decide whether an insecticide can be profitably applied, count the percent of plants with recent whorl leaf feeding, and measure the tassel ratio of the field. To determine the tassel ratio, measure the height of the plant with leaves extended; split the stalk open and measure from the tip of the developing tassel to the base of the plant. Divide the tassel height by the plant height, and multiply by 100. This figure is the tassel ratio. If the tassel ratio is at least 35 (preferably 40 to 45) and at least 75 percent of the plants show recent whorl feeding, then treatment is justified. Use 1 pound of actual diazinon in granular form per acre or 1 1/2 to 2 pounds of carbaryl (Sevin) as granules. For spraying, use the same amount of actual insecticide per acre, and direct the spray to the upper third of the plant. Aerial applications should be granules, not sprays or dusts. Follow the label precautions in harvesting and feeding treated corn. DDT can be used as granules or sprays, but not on or adjacent to dairy farms.

Chinch bug nymphs are abundant in thin stands of grain and in thin spots of thicker stands in east-central Illinois. They can also be found on corn where a grain or grass crop was plowed down before planting. Hot, dry weather favors chinch bug development; wet weather promotes the spread of a fungus disease that kills many of them.

If migration from small grain to corn appears likely, apply 1/2 pound of dieldrin per acre as a barrier treatment. Apply it in a strip two rods wide into the grain and the same distance into the corn just as migration begins. If the grain is being damaged and the entire field is to be sprayed, use only 1/4 pound of actual dieldrin per acre. Do not apply dieldrin within one week of harvest, and do not feed the straw to dairy cattle or livestock being fattened for slaughter.

Dairy farmers should not use dieldrin but might try one pound of carbaryl per acre on the corn. Direct the spray to the base of the plants. Repeated treatments may be needed during migration, as carbaryl is not so effective as dieldrin.

Thrips, which are tiny yellow or black insects (about 1/16 inch) with rasping, sucking mouth parts, are common in the whorl leaves of corn. Their feeding appears as tiny streaks of white on leaves. When thrips are abundant, the leaves take on a silvery appearance. The plants usually outgrow the damage, and rain helps. (Although it has not been verified, thrips must be listed as a potential vector for maize dwarf mosaic virus.) If control became necessary, carbaryl at 1 pound of actual chemical per acre should be satisfactory.

Stored-grain insects: With the beginning of wheat harvest, stored-grain insects are preparing for the big feast. Prevent damage from these pests by sweeping up and cleaning out all old grain and other debris from inside and around the bin. Then spray all inside surfaces to runoff with 1.5% premium-grade malathion or 2.5% methoxychlor. Also treat the wheat, as it is being binned, with a liquid or dust form of premium-grade malathion. These three steps will insure insect-free wheat for a year or more.

Bagworms have hatched and are attacking evergreens and other shrubs. In the central section, the worms are about 1/4 inch long and are enclosed in a brown, cone-shaped sack that they carry with them. Larger worms in their protective sacks are difficult to kill and in another two or three weeks spray results may be unsatisfactory. Therefore, apply the sprays immediately if worms are present. An insecticide like malathion, carbaryl or diazinon will control bagworms. Follow the directions on the label for treatment.

Caution: Before applying insecticides, read the labels carefully and follow all precautions. This not only will insure personal safety, but will also eliminate residue hazards.

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FOR IMMEDIATE RELEASE July 2, 1965

INSECT SURVEY BULLETIN NO. 11

This is the eleventh in a series of weekly bulletins on the general insect situation in Illinois (fruit insects excepted), prepared by entomologists of the University of Illinois College of Agriculture, Illinois Natural History Survey and cooperating agencies. It is designed to forewarn people in Illinois of impending changes in insect activity and to suggest abbreviated control measures. These reports indicate only general trends. Each individual should check his own fields to determine local conditions.

Chinch bug populations have been high in thin stands of wheat in an area bounded by a line from Joliet to Peoria to Champaign to the Indiana border. Greatest numbers are present in areas that had the least rain in the past month. As grain dried during the past 10 days, the bugs began to migrate in search of green food. They have killed grass weeds as well as wheat and corn in the path of their migration, which reportedly has extended as far as 40 rows into corn. In addition, corn planted on grass or grain sods is also infested with chinch bugs.

To control chinch bugs as they migrate from small grain to corn, apply 1/2 pound of dieldrin per acre to a strip two rods wide into the grain and as far into the corn as chinch bugs are clustered heavily. Do not apply dieldrin within one week of grain harvest, and do not feed the straw to dairy cattle or livestock being fattened for slaughter.

Many persons have questioned the effectiveness of dieldrin as a barrier treatment. First, it is necessary to spray the two-rod strip into the small grain to expose bugs before they reach the corn. Second, dieldrin will not give fast control. As chinch bugs die, they are rapidly replaced by new migrants. Dieldrin is killing the bugs and will continue to do so for four or five days after application. If migration continues, it may be necessary to reapply dieldrin.

Where wheat was plowed under and planted to corn, concentrate the spray at the base of the plants in an attempt to kill the bugs feeding on the plant below soil level. Use 1/4 pound of dieldrin per acre.

Dairy farmers should not use dieldrin but might try one pound of carbaryl per acre on the corn. Direct the spray to the base of the plants. Repeated treatments may be needed during migration, as carbaryl is not so effective as dieldrin.

European corn borer becomes less important as a potential problem with each successive week. Although corn borer larvae can be found in many fields throughout Illinois, numbers in general are low. Corn borer development was slightly earlier this year than in previous years, and corn development was slightly later. This meant poorer survival of corn borer larvae. In addition, moths scattered their egg laying over many fields. Wind and rain at the peak of moth emergence killed many of the moths before they laid their eggs.

Pupation is progressing rapidly in southern Illinois, and moths for a second generation should emerge within the next two weeks. A few eggs will most likely be scattered in many fields. A third generation of borers will probably

appear in late August. No control measures are being recommended at this time. Half-grown worms can now be found in corn in central and north-central Illinois. Pupation for a second generation should take place the last week of July.

Armyworm moths have been abundant around lights for the past two weeks in central Illinois. If they follow the usual custom, they will migrate northward to deposit eggs in grassy areas. Whether this oviposition will occur in Illinois cornfields, as it did last year, remains to be seen.

Black cutworm moths are also migrating northward. Where they will deposit eggs also remains to be seen, but we do not expect a new generation to develop in corn this year.

Scavenger beetles, commonly referred to as picnic beetles, are now emerging and will soon be a nuisance in many areas. Areas that were dry in May should have fewer beetles than normal, while areas having moderate moisture or above should be more heavily infested. These beetles are about 1/4 inch long, are shiny black and have four yellow spots on their backs. Food odors attract them. They get into food at picnics and cookouts. They swarm onto overripe or injured fruits and vegetables in gardens. They appear around garbage containers and on screen doors and kitchen windows. Keep vegetables and fruits picked, and dispose of overripe or damaged produce. Malathion or diazinon will give a degree of control on fruits and vegetables. Check the label for application directions for each crop. If you want to eat on an unscreened patio or on the lawn, it will help to apply malathion or diazinon on shrubbery in the morning. The odor will dissipate by late afternoon. Pyrethrins may also be used for control.

Potato leafhoppers are small, wedge-shaped green insects that suck sap from alfalfa as well as potatoes. Damaged alfalfa is yellow to purple and stunted. The yield of damaged alfalfa may be similar to that of undamaged alfalfa, but the quality is quite different. Damaged alfalfa makes stemmy, poor-quality hay.

Damage from this pest is now showing up in central and north-central Illinois. After damage is apparent, cutting is the only answer, since the damaged growth will not recuperate. The new shoots will grow normally after cutting. If leafhoppers are numerous and damage is not yet apparent, apply 1 pound of methoxychlor per acre. Do not harvest for one week.

House flies may soon become a nuisance now that many areas have had some moisture. Control programs should be started now. Follow these three steps: (1) Practice good sanitation; clean out fly-breeding areas, such as manure, rotting straw, wet hay and feed as often as is practical (preferably once a week). (2) Apply a barn spray material, such as dimethoate (Cygon), diazinon or ronnel (Korlan), to runoff on ceilings and walls of all livestock buildings. Use only ronnel in poultry houses. Always cover all water and feed troughs before spraying, and do not spray animals. (3) You may also want to apply a supplementary spray bait, using the same insecticide mixed with corn sirup and water (2:1 ratio). Other insecticide baits may be used as supplements to good sanitation and barn spraying. This treatment will also control stable flies resting in and around livestock buildings.

Stable flies and horn flies are numerous on pastured cattle in many areas. Face flies are still few in number but should increase from now until September.

To control flies on pastured dairy cattle, apply 1 to 2 ounces of an oil-base spray of 2% ciodrin, 1.0% dichlorvos (DDVP) or 0.1% pyrethrin as needed. Pay particular attention to the legs and undersides when spraying.

For pastured beef cattle, apply 0.5% toxaphene water-base spray at 1 to 2 quarts per animal every three weeks. Allow 28 days to elapse between treatment with toxaphene and slaughter.

Caution: Before applying insecticides, read the labels carefully and follow all precautions. This not only will insure personal safety, but will also eliminate residue hazards.

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FOR IMMEDIATE RELEASE July 9, 1965

INSECT SURVEY BULLETIN NO. 12

This is the twelfth in a series of weekly bulletins on the general insect situation in Illinois (fruit insects excepted), prepared by entomologists of the University of Illinois College of Agriculture, Illinois Natural History Survey and cooperating agencies. It is designed to forewarn people in Illinois of impending changes in insect activity and to suggest abbreviated control measures. These reports indicate only general trends. Each individual should check his own fields to determine local conditions.

Chinch bugs are still migrating from small grains to corn but in general migrations are about completed. The rains this week undoubtedly killed many of the small red nymphs, and now nearly mature black nymphs and adult bugs are predominant in most fields. The winged adults will soon fly to weak, thin spots in cornfields and to other grasses and sorghums. Here they will deposit eggs and another generation will develop. We can predict that a moderate to heavy second generation will develop and be damaging in an area bounded by a line from Joliet to Peoria to Paris to the Indiana border. Greatest numbers of bugs will be present in areas that had the least rain in the past month.

Dieldrin provided excellent control of first generation. It cannot be used for second generation bugs in any fields except those to be used for cash grain. The organic phosphates such as diazinon and malathion were tried on first generation bugs and were comparatively ineffective. We used carbaryl (Sevin) as 80 percent sprayable at 1 1/4 pounds per acre and it was effective. This can be used on sorghums with no time limitation if it is to be used as forage, but allow an interval of 21 days between application and harvest for sorghum to be harvested as grain.

Corn borer moths can be found in the southern tip of Illinois. About one-third of the first generation have now emerged as moths. This moth emergence will continue for at least two more weeks. The moths will deposit eggs for a second generation in fields now in pretassel to early silk stage. There undoubtedly will be a third generation in this area.

Pupation has begun in central and south-central Illinois, and emergence of moths will begin in about two weeks. Moth emergence for a second generation in northern Illinois will not take place for three weeks. However, there has been some late emergence of moths from overwintering borers during the past ten days.

At present, we do not expect a generally severe second generation corn borer infestation.

Northern corn rootworm damage has been reported in a few fields where corn has been grown each year for several years and soil insecticides have been used annually. These white worms devour the corn roots. Such isolated instances indicate an enlargement of the resistant corn rootworm area we have reported during the past years. In most instances the worms are nearly mature and there will be little to gain by applying one pound of diazinon per acre at the base of the plants. If the worms are still small it may pay to make this application. A mature rootworm larva is about 1/2 inch long.

Fall armyworms have been feeding in the whorls of late corn. This insect which can be found deep in the whorl is the one which literally riddles the leaves of the corn plant. Several plants in one area of a field are attacked by worms. Ordinarily there is only one worm in each plant. The corn rapidly grows away from the damage. By contrast, true armyworms stay in the soil during the day and migrate up onto the plants at night stripping the leaves as they go. Common stalk borers are striped worms with a purple area on the middle of the body. They riddle corn leaves also and can be found deep in the whorl but only individual plants along fence rows, ditchbanks and grass waterways are attacked.

Thus far none of these worms have been abundant enough to warrant the use of insecticides as a protectant.

Spruce bud scales are mahogany-brown globular scales clustered at the buds and nodes of spruce. The eggs which have overwintered under the mature scales are now hatching in central and northern Illinois. Spray infested spruce trees now with two teaspoons of malathion concentrate in a gallon of water. This is one quart in one hundred gallons.

Oak kermes (kermez) are the spherical scale insects now commonly found clustered at the base of new shoots of oaks, particularly bur oaks. Apply malathion as for spruce bud scale.

Mimosa webworms attack the leaves of honey locust and mimosa. A small pale-gray to brown, active, striped caterpillar can be found in a bunch of leaves tied together with a silken thread. They skeletonize these leaflets and then form a new nest. The old nest turns brown and the leaves die. Those worms now feeding are the first generation. There will be a second and possibly even a third generation this year. Use malathion sprays as for spruce bud scale. Sprays of lead arsenate may also be used.

Caution: Before applying insecticides, read the labels carefully and follow all precautions. This not only will insure personal safety, but will also eliminate insecticide residue hazards.

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Special Note to Farm Advisers (NOT FOR PUBLICATION)

If you have reports of suspected rootworm resistance to aldrin or heptachlor, check the reports. If the field has been in corn for several years, has also been treated with soil insecticide almost every year, and you find rootworm larvae feeding heavily on the roots or you find dozens of green beetles feeding on the silks, let us know. We need to know about these instances now.

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FOR IMMEDIATE RELEASE July 16, 1965

INSECT SURVEY BULLETIN NO. 13

This is the thirteenth in a series of weekly bulletins on the general insect situation in Illinois (fruit insects excepted), prepared by entomologists of the University of Illinois College of Agriculture, Illinois Natural History Survey and cooperating agencies. It is designed to forewarn people in Illinois of impending changes in insect activity and to suggest abbreviated control measures. These reports indicate only general trends. Each individual should check his own fields to determine local conditions.

Chinch bug migrations, except in a few instances, are complete. Adults will now be flying in search of suitable corn, sorghum or grass fields where they will deposit eggs for another generation of bugs. They will concentrate on thin, weak spots in these fields. This next generation will be noticeable in two to three weeks. For control, apply 1 1/4 pounds of carbaryl (Sevin) per acre. This can be used on sorghum, corn or grass for forage with no interval between application and harvest. Allow 21 days between application and harvest of sorghum as grain.

Corn borer moths are depositing eggs in the southern part of Illinois, but most of this activity is confined to the southern tip. Here egg masses will be concentrated on corn in the pretassel to early silk stage.

No moth emergence has been noted this week in the northern half of Illinois but pupation has begun throughout most of this area. Thus a few moths will be flying and laying eggs in about two weeks.

Corn borers are being killed or driven from their burrows by scavenger beetles. This is further decreasing the borer population. At present, we do not anticipate a severe second generation corn borer infestation.

Salt-marsh caterpillars, generally called woolly bears, have been very abundant in some cornfields of central Illinois. They have fed on the corn leaves and silks. Less than 5 percent of the silks have been fed upon in the infested fields and in general, the silks will grow back and be pollinated. Silk recovery will not be complete but will be nearly so. It is doubtful that chemical control will be required.

Northern corn rootworms, as previously reported, have been damaging in some fields of continuous corn where a soil insecticide, either aldrin or heptachlor has been used for several years. This is resistance as discussed for the past three years. Even in northern Illinois, populations this week varied from mature worms to adults so applications of insecticide now would be of no value so far as root damage is concerned.

Corn leaf aphids have begun to build-up in the southern part of Illinois and will soon appear in central Illinois. We cannot recommend a control for this pest as we do not know the best timing for an insecticide application to receive maximum benefits.

True armyworm moths are still flying. They may be attracted to grassy cornfields for egg laying. Observe such fields in northern Illinois for the next two weeks. Carbaryl can be used for control.

White grubs are damaging soybeans in eastern and central Illinois. They are only half grown and will continue to feed until October. Only one specie is involved and the adult, a June beetle, lays eggs in soybean fields where the rotation has included only soybeans and corn for several years.

It is doubtful if chemicals will be helpful in control. Little can be done this late in the season.

Stable flies are causing the most annoyance to livestock while horn fly populations are light to moderate. Face fly numbers remain low, at most one to two per animal. For control of these flies on pastured dairy cattle, we recommend that two percent Ciodrin in oil be applied for flies. House flies are not especially abundant as yet but control programs using good sanitation and barn sprays should be started.

Sod webworm moths are flying and will soon deposit eggs for another generation. First generation worms have caused no severe damage as soil fertility and moisture kept the grass growing these past weeks. However, the moths now flying are seeking luxuriant lawns on which to deposit eggs. The worms hatch and begin to feed. Then, as grass growth slows in early August, webworm damage to these lawns will become apparent.

If your lawn is now luxuriant and you observe scads of moths on your lawn during the next two or three weeks, be prepared to apply two pounds of actual carbaryl (Sevin) or one pound of actual diazinon per 10,000 square feet of lawn. They may be used as sprays or granules. When spraying, use sufficient water to get good coverage. Mow and water before applying. Do not water the lawn for three or four days after application. Do not apply insecticides unless you have seen lots of webworm moths in your yard at dusk.

Caution: Before applying insecticides, read the labels carefully and follow all precautions. This not only will insure personal safety, but will also eliminate insecticide residue hazards.

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FOR IMMEDIATE RELEASE July 23, 1965

INSECT SURVEY BULLETIN NO. 14

This is the fourteenth in a series of weekly bulletins on the general insect situation in Illinois (fruit insects excepted), prepared by entomologists of the University of Illinois College of Agriculture, Illinois Natural History Survey and cooperating agencies. It is designed to forewarn people in Illinois of impending changes in insect activity and to suggest abbreviated control measures. These reports indicate only general trends. Each individual should check his own fields to determine local conditions.

Pupation of first-generation corn borer varies from 33 to 75 percent in the area from St. Louis north to Route 6. Some moths have already emerged, and emergence will continue during the next three weeks, as will egg laying.

In this area, first-generation populations are low; populations for individual counties range from 0 to 3 borers per 100 stalks except in extreme western Illinois, where the average population per county ranges from 8 to a maximum of 12 borers per 100 stalks. Last year the first-generation populations in these same counties ranged from 1 to 28 borers per 100 stalks. We therefore do not anticipate a problem with second-generation corn borer except in this westernmost area. However, we have not checked the first-generation corn borer population in Illinois north of Route 6.

Control of second-generation corn borer will be profitable only in certain fields of sweet corn, some hybrid production fields and extremely late-maturing fields of commercial field corn.

For field corn, apply one pound of diazinon as granules when egg mass counts average one per plant and first egg hatch is observed. Carbaryl (Sevin) granules may also be used.

Sweet corn canners can follow their usual guidelines.

Corn leaf aphid populations have increased rapidly this past week. These tiny green plant lice can be found in tassels and on leaves of plants in most fields. We have no way of accurately assessing the importance of aphid populations. We do know that severe infestations of aphids are associated with barren plants as well as shriveled ears.

Malathion at one pound per acre will reduce infestations.

White grubs have killed out spots in some soybean fields in central and east-central Illinois. As plants are killed, the grubs will migrate down the row a short distance in search of food. Many will continue to feed until early October and will then overwinter deep in the soil; late next May they will come up to the surface and feed on whatever plant roots are there. This feeding will continue until mid-June.

Little can be done now to control these grubs, but plan to control these pests next spring.

Northern corn rootworm adults are small, active, light yellow to green beetles that feed on corn silks in fields where corn has been grown successively for three or more years. These beetles are now emerging, and their feeding can affect pollination if there is an average of several beetles per silk. Most insecticides will kill these beetles; carbaryl (Sevin) is commonly recommended.

In the larval stage, these rootworms eat the roots of corn, increasing the possibility of lodging. However, most of the lodging this past week was caused by wind and not by rootworm feeding.

Sod webworm moths become more abundant each week. These moths are seeking luxuriant lawns on which to deposit eggs. Worms hatch from the eggs and feed. As grass growth slows up in early August, the damage to these lawns will become apparent.

If your lawn is now luxuriant and moths are extremely abundant, be prepared to apply two pounds of actual carbaryl (Sevin) or one pound of actual diazinon per 10,000 square feet of lawn in late July or early August. Either one may be used as a spray or granules. When spraying, use enough water to get good coverage. Mow and water the lawn before applying the treatment. Do not water again for three or four days after application. Do not apply any insecticide unless you have seen lots of webworm moths in your yard at dusk.

Caution: Before applying insecticides, read the labels carefully and follow all precautions. This not only will insure personal safety, but will also eliminate insecticide residue hazards.

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Special Note to Farm Advisers (NOT FOR PUBLICATION)

The poisonous brown recluse spider (*Loxosceles reclusa*) has now been found in the following Illinois counties: Saline, Jackson, Massac, Pulaski, Monroe, Wayne, Moultrie, and Champaign.

If you find a spider that resembles this species, put the specimen in alcohol and send it to us for positive identification.

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FOR IMMEDIATE RELEASE July 30, 1965

INSECT SURVEY BULLETIN NO. 15

This is the fifteenth in a series of weekly bulletins on the general insect situation in Illinois (fruit insects excepted), prepared by entomologists of the University of Illinois College of Agriculture, Illinois Natural History Survey and cooperating agencies. It is designed to forewarn people in Illinois of impending changes in insect activity and to suggest abbreviated control measures. These reports indicate only general trends. Each individual should check his own fields to determine local conditions.

Fall armyworms are the brown to dull green smooth-skinned worms that can be commonly found in cornfields. These worms feed in the whorl, giving plants a ragged appearance as the leaves emerge.

These fall armyworms, which appeared earlier than usual (Bulletin No. 12), have increased greatly, and larvae are easy to find in 3 to 5 percent of the cornfields in the southern half of the state, with the greatest infestations south of Highway 50. Fields in the pretassel or earlier stages have from 10 to 80 percent of the plants infested. In some fields the worms have already matured and left the plants; in others, the worms are still small; in still others, eggs, all sizes of larvae, pupae and adults are present. Many fields will completely recuperate, while others may be noticeably damaged. Before applying control measures, be sure that the worms are still present and that most of them are not more than one inch long. If the majority of the worms are one inch long or longer, they are about mature and their feeding is over.

Several materials will kill these worms if they can be reached deep in the whorl. Carbaryl (Sevin) granules or diazinon granules should provide control with a minimum interval between application and harvest as ensilage, stover or grain. DDT or toxaphene granules can be used if the corn is to be used only as grain. We emphasize the use of granules if the worms are moderately deep in the whorl, since the granules may penetrate the whorls better than a spray. If the worms are high in the whorls, then sprays will give adequate control.

Corn hybrid seed producers especially should be concerned about this fall armyworm. It is the worm that often attacks seed corn just before harvest and scars the top of the kernels. (However, mice and earworms will do the same thing.) To avoid damage, look for the gray scaly egg masses of the fall armyworm. Examine the plants and be ready to apply carbaryl or DDT as a spray in mid- to late August (do not use DDT on dairy farms). We can not at this time provide any better timing information.

Corn leaf aphids are decreasing in the southern half of the state, particularly in the earlier maturing corn. The sticky honey-dew secretions and the white cast-off skins of the aphids are present, but aphid populations in these fields are low. Infestations may develop in some of the later maturing fields.

In the northern half of the state, aphid infestations are increasing rapidly. In some fields, 100 percent of the whorls or tassels are infested.

Very severe infestations of aphids may result in barren plants and shriveled ears. As a rule of thumb, value of control, except under extreme infestations, is questionable if corn is pollinating or has pollinated. However, if corn is pretassel or younger and 25 percent or more of the whorls are severely infested, control may be profitable.

In general, we believe that corn leaf aphids present a greater problem to the seed producer than to the commercial grain producer.

Both 1 pound of phorate (Thimet) and 1.25 pounds of diazinon as granules in pretassel corn provided excellent control in tests this past week. Sprays of diazinon, malathion, mevinphos (Phosdrin) and parathion will control these aphids. Do not use phorate if it was used as a soil insecticide, and even then do not apply later than whorl stage. Mevinphos and parathion sprays should be applied only by operators prepared to use protective clothing. Phorate granules can be used by the individual, but extreme care must be taken when handling. Diazinon granules can be used to within 2 days of harvest, malathion to within 5 days, parathion to within 12 days and mevinphos to within 1 day.

Corn borer moths have been depositing eggs in late cornfields in the southern fourth of Illinois for some time. The average is about 15 egg masses per 100 stalks. In general, second- and third-generation borer populations will probably be higher this year than last.

Pupation of first-generation borers in the northern third of the state varies from 25 to 75 percent, with emergence just starting.

First-generation populations are lower than in previous years, so we do not expect a second-generation corn borer problem.

Spider mites are present in some soybean fields in south-central Illinois. These tiny mites rasp the undersurfaces of leaves, giving them a mottled appearance. In addition, they spin webs on the undersides of the leaves. These mites increase during dry weather. The best control is carbophenothion (Trithion), which can be used to within 7 days of harvest of beans as grain.

Spotted alfalfa aphids are present in numbers in alfalfa fields in southern Illinois. If dry weather continues, damage could become severe. One pound of malathion, 1/2 pound of diazinon or 1/4 pound of demeton can be used. Do not apply diazinon within 10 days of harvest. Do not apply demeton more than once per cutting or within 21 days of harvest.

Potato leafhopper damage has become more apparent in alfalfa fields. Some reports of severe damage to this year's seedings have been received. Malathion or methoxychlor will provide control. Unfortunately, it will do little good to kill the leafhoppers after they have been feeding for some time. They inject a toxin into the plant which produces the purpling, yellowing and stunting.

Northern corn rootworm adults are becoming more numerous. They are the green beetles that feed on corn silks. This insect is showing signs of general resistance to the soil insecticides.

White grubs are still feeding on soybeans, and patches of dead beans in fields are getting larger. Little can be done to control this pest.

Simyra henrici, an orange and brown spiny caterpillar, is common in cornfields throughout the state. It eats the leaves of corn, but has been more of a curiosity than a serious pest.

Bagworms are now evident in evergreens. In some instances it is too late to control them; but if the worms are still small, use carbaryl, lead arsenate, malathion or toxaphene sprays.

Caution: Before applying insecticides, read the labels carefully and follow all precautions. This will not only insure personal safety, but will also eliminate insecticide residue hazards.

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FOR IMMEDIATE RELEASE

August 6, 1965

INSECT SURVEY BULLETIN NO. 16

This is the sixteenth in a series of weekly bulletins on the general insect situation in Illinois (fruit insects excepted), prepared by entomologists of the University of Illinois College of Agriculture, Illinois Natural History Survey and cooperating agencies. It is designed to forewarn people in Illinois of impending changes in insect activity and to suggest abbreviated control measures. These reports indicate only general trends. Each individual should check his own fields to determine local conditions.

Western corn rootworms were found in numbers in one field of corn in western Illinois this week. There was no commercial damage to the corn, but it was quite easy to collect dozens of beetles. Whether or not there are other similarly infested fields is a matter for conjecture; however, individual specimens were also found in three other fields.

This rootworm is new to Illinois and is the one that has caused the severe problems in western Iowa, Nebraska, Kansas, and South Dakota, as well as in localized areas in Missouri and Minnesota. The beetles in those states are highly resistant to the soil insecticides aldrin and heptachlor, and the beetles collected in Illinois are probably also resistant.

We can see no reason for farmers to become excited at this time. Larval damage by both northern and western corn rootworms is over and will not occur again until next year. We will have an opportunity to examine research results of control methods obtained by other states before next year, and no control measures can be applied now.

Northern corn rootworm adults are abundant in some fields, but in a survey of 30 fields we found only two that had large numbers of beetles. In neither case was resistance to soil insecticides involved. We do expect, however, to run into some problems of resistance.

Corn leaf aphids continue to be a problem. Unless a high percentage of the plants are severely infested, we do not believe it will be profitable to apply insecticides to fields that are already pollinated or are pollinating. Plants in pretassel or younger can be damaged more readily.

Phorate granular applications of two weeks ago have continued to be effective in preventing aphid build-up, but the diazinon granular applications have begun to break down and aphid populations in these plots are increasing. Sprays of diazinon, malathion, mevinphos (Phosdrin) and parathion will also control these aphids.

Do not use phorate if it was used as a soil insecticide, and even then do not apply later than whorl stage. Mevinphos and parathion sprays should be applied only by operators prepared to use protective clothing. Phorate granules can be used by the individual, but extreme care must be taken in handling. Diazinon granules can be used to within 2 days of harvest, malathion to within 5 days, parathion to within 12 days and mevinphos to within 1 day.

Corn borer moths are common in the northern half of Illinois, and egg masses can be found particularly in fields of later maturing corn. About 90 percent of the first-generation worms have pupated, and two-thirds of them have emerged. Although we do not expect severe corn borer damage, second-generation corn borer feeding will be evident in many fields.

Fall armyworms are now appearing in a few late cornfields in the northern half of the state. These worms are small and not numerous. But moths will be abundant during the next three weeks and will be depositing gray scaly masses of eggs on corn leaves. These egg masses contain 50 to 100 eggs and can be found on the undersides of leaves. They attack the whorl and later the ear.

Several materials will kill these worms if they can be reached deep in the whorl. Carbaryl (Sevin) granules or diazinon granules should provide control with a minimum interval between application and harvest as ensilage, stover or grain. DDT or toxaphene granules can be used if the corn is to be used only as grain. We emphasize the use of granules if the worms are moderately deep in the whorl, since granules may penetrate the whorls better than a spray. If the worms are high in the whorls, then sprays will give adequate control.

Seed producers should be on guard, as this insect as well as corn earworms and mice will scar the tips of the kernels of seed. To avoid damage, look for those gray scaly egg masses of the fall armyworm. If they are present be ready to apply carbaryl or DDT as a spray in mid- to late August (do not use DDT on dairy farms). At this time we cannot give any better timing information.

Elm leaf beetle larvae are defoliating Chinese elms. They are the second generation and can be controlled with carbaryl, DDT or lead arsenate sprays.

Caution: Before applying insecticides, read the labels carefully and follow all precautions. This will not only insure personal safety, but will also eliminate insecticide residue hazards.

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Prepared by H. B. Petty, Steve Moore, Roscoe Randell and Clarence E. White
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FOR IMMEDIATE RELEASE August 13, 1965

INSECT SURVEY BULLETIN NO. 17

This is the seventeenth in a series of weekly bulletins on the general insect situation in Illinois (fruit insects excepted), prepared by entomologists of the University of Illinois College of Agriculture, Illinois Natural History Survey and cooperating agencies. It is designed to forewarn people in Illinois of impending changes in insect activity and to suggest abbreviated control measures. These reports indicate only general trends. Each individual should check his own fields to determine local conditions.

Corn leaf aphid control with insecticides will probably not pay from now on, as infestations are declining. Shortly after pollination, corn plants become less favorable for aphid survival. Winged ahpids develop and leave the plants; most of the wingless ones die. Also, both larvae and adult lady beetles that devour quantities of aphids each day are abundant in many fields. This week occasional fields averaged as high as 20 or more lady beetles per plant. Other predators are also present. Brown swollen, hardened aphids that have been killed by a wasp parasite are also numerous. A fungus disease is also killing aphids. Hard rains have helped in control. Only extremely late fields of corn not yet pollinated and not having these natural controls will profit from insecticides.

Several non-related observations can be made. The white specks remaining on aphid-infested plants are the cast-off skins of aphids. The green maggots are larvae of flower flies; they eat aphids. The sticky material on the corn leaves is the aphid secretion called honeydew. The blackened appearance is a mold that grows on this sugary honeydew. Some fields have many plants that were actually coated with aphids and the tassel leaves turned brown. Many of these plants are stunted, the internodes are shortened, and the leaves are yellow mottled. When cool weather arrives this fall, such plants will turn purple, closely resembling those infected with maize dwarf mosaic. Thus severe damage by aphids may be confused with maize dwarf mosaic infection.

Northern corn rootworm adults are very common in many cornfields throughout the northern half of Illinois. These small green beetles are thick in some fields, and they eat the silks of the corn. If pollination has occurred, the most they will do now is to eat the tip of the ear. If pollination has not taken place, several beetles per silk can interfere with pollination. (We refer to beetles on all silks of one ear, not several beetles on one individual silk. We are sorry that we were not more explicit last week.) So if there are several beetles per silk and pollination is just beginning, an application of carbaryl (Sevin) or diazinon may pay.

Southern corn rootworm adults are also known as spotted cucumber beetles. They are yellow to green beetles with about 12 spots on their backs. Their young also eat corn roots, causing the plants to lodge. The beetles also eat corn silks, but ordinarily the problem is not so severe as with northern corn rootworm.

Three pests of soybeans may soon be evident. Bean leaf beetles are red, green or yellow beetles that ordinarily, but not always, have black spots on their wings. Green cloverworms are green worms with white stripes, and they jump when

disturbed. They seem to bounce around on the ground when knocked from the plant. Garden webworms are green worms with black spots that web the undersides of leaves. The beetles eat holes in the leaves and feed on blossoms and pods; the green cloverworms eat the edges of leaves, giving the plants a ragged appearance; and the webworms skeletonize the leaves. Carbaryl or toxaphene should adequately control all three, although an insecticide is recommended only under extreme infestations.

Corn earworm moths are now appearing and will lay eggs on fresh silks. Fall armyworm moths are also increasing in number. Hybrid seed corn producers should watch for these insects and their eggs and be prepared to apply control measures if necessary.

Crickets should not be so abundant this fall as they were a few years ago. However, if migrations increase, an application of chlordane to the outside foundation of the house will help to control these pests, although they may enter the house before they die. For details about foundation sprays, ask your county farm adviser for Circular 887, "Keep Outdoor Pests Out of Your House."

Caution: Before applying insecticides, read the labels carefully and follow all precautions. This not only will insure personal safety, but will also eliminate insecticide residue hazards.

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FOR IMMEDIATE RELEASE August 20, 1965

INSECT SURVEY BULLETIN NO. 18
(FINAL ISSUE)

This is the eighteenth and final issue in a series of weekly bulletins on the general insect situation in Illinois (fruit insects excepted), prepared by entomologists of the University of Illinois College of Agriculture, Illinois Natural History Survey and cooperating agencies. It is designed to forewarn people in Illinois of impending changes in insect activity and to suggest abbreviated control measures. These reports indicate only general trends. Each individual should check his own fields to determine local conditions.

Corn leaf aphids are being killed by parasites, predators and disease. Fields observed this week showed from 20 to 90 percent mortality of aphid populations. Insecticide treatments will no longer be needed to control this pest.

Chinch bugs were observed damaging spots in cornfields and may also be numerous in such grasses as millet, sudan and sudan-sorghum crosses in eastern Illinois. Most of them are second-generation nymphs, but some first-generation adults are still present. Carbaryl at 1 1/4 pounds per acre has proved effective against chinch bugs.

Fall armyworm damage is now evident in many late-maturing cornfields. Some fields of corn still in the whorl stage or just now tasseling showed 70 to 80 percent feeding damage. However, many of the worms are full grown (1 1/4 inch) or have already left the plant to pupate in the soil.

Unless at least 20 to 25 percent of the plants still have worms less than one inch long, treatment is not justified in field corn. Carbaryl or diazinon as granules will provide control. Allow two days to elapse between treatment with diazinon and harvest of the corn for ensilage, stover or grain. Carbaryl has no waiting period.

Corn borer moth emergence is complete in the central and western sections and is nearing completion in the northern section of Illinois. Egg laying will continue for another two or three weeks, but we do not expect severe corn borer damage.

Occasional fields of late-maturing corn may be damaged, since moths will concentrate their egg laying here. Fields averaging one egg mass or more per plant can be profitably treated at first hatch with either carbaryl (Sevin) or diazinon as granules.

Special Note to Seed Producers: Corn earworms are now hatching in many cornfields in central and northern Illinois. Moth egg-laying activity has increased this past week, but the overall infestation should be less than that of last year. These second-generation worms are hatching from eggs laid on the silks. Seed producers may wish to protect their late-maturing fields with sprays or dusts of DDT or carbaryl. Make the first application when the field is in full silk, and treat again seven days later for best results. Some fall armyworm and corn borer are also in ear tips.

Garden webworms are green worms with black spots that can be found feeding in alfalfa, where they strip the leaves and web them together. In severe infestations, new seedings of alfalfa may be killed. If the worms are numerous and damaging plants, apply 1 1/2 pounds of carbaryl (Sevin) per acre. There is no waiting period for carbaryl.

Face flies increased in numbers on pastured cattle this past week in the northern half of the state. A continued build-up can be expected for the next three or four weeks.

To control face flies on pastured dairy cattle, apply 1 to 2 ounces of 2.0% Ciodrin as often as needed. For pastured beef cattle, use 5.0% toxaphene in oil in a head oiler or back oiler. Allow 28 days to elapse between treatment with toxaphene and slaughter of the animals. Ronnel and phenothiazine as feed additives are not effective in reducing adult face fly numbers.

Mosquitoes are troublesome in many areas. To reduce this nuisance around your home, follow these suggestions: (1) Eliminate standing water that may accumulate in eave troughs, old tires, children's toys, cans, etc. (2) Spray the shrubbery and tall grass with a 1.0% malathion water-diluted spray. To mix, use two ounces of the 50-57% malathion emulsion concentrate per gallon of water. Repeat the application in two weeks if needed. (3) Keep screening on all doors and windows in good repair. (4) In addition, hang plastic resin strips (2" x 10") containing 20% dichlorvos (DDVP) at the rate of one strip per 1,000 cubic feet, or about one per room. These strips are effective for four to six weeks. The dichlorvos vaporizes, slowly killing mosquitoes, gnats and flies. These strips are safe to use around children and pets. An 0.1% pyrethrin space spray, fine mist or fog may be used indoors for quick knockdown in place of the dichlorvos resin strips. Repeat treatments will be needed with the pyrethrin. (5) When entering mosquito-infested areas, apply a repellent to exposed parts of the body. The best mosquito repellent is DEET (diethyl toluamide).

Fleas are causing problems to returning vacationists. The adult fleas have developed from the worm stage in dog or cat beds or resting areas. The worms will hatch in such places as rugs or upholstered furniture and in dirt in flower and shrubbery beds from eggs laid by adult fleas that drop from the dog or cat. Hungry adult fleas will spread throughout the entire house and yard.

For control, treat areas where fleas occur with carbaryl (Sevin) or malathion as a dust or spray. The dog or cat can also be treated with the same material.

Caution: Before applying insecticides, read the labels carefully and follow all precautions. This not only will insure personal safety, but will also eliminate insecticide residue hazards.

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Cooperative Extension Service, University of
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FOR IMMEDIATE RELEASE April 22, 1966

INSECT SURVEY BULLETIN NO. 1

This first weekly bulletin of 1966 on the general insect situation in Illinois (fruit insects excepted), prepared by entomologists of the University of Illinois College of Agriculture, Illinois Natural History Survey and cooperating agencies, reports general trends in insect activity and suggests abbreviated control measures. Each individual should check his own fields to determine local conditions.

Feeding by alfalfa weevil is already apparent in the seven southernmost counties and will appear this week in many counties north to Highway 50.

The adult alfalfa weevil is a brown to gray beetle about 1/4 inch long with a deep brown to almost black patch on its back. The females have been laying eggs in alfalfa stems for several weeks and will continue to do so for some time. The light green larvae with white stripes down their backs feed during the day. They cling to the plant or hide in the terminals. Adult weevil feeding shows as a feathering of the leaf margin, while the larval feeding skeletonizes the leaves.

Old established stands of alfalfa are now beginning to show severe feeding. In mixed stands the weevils are concentrating on the alfalfa plants, and severe infestation may soon kill the plants. Although feeding is light in last year's seedings, the adults are concentrating their egg laying in these fields and damage will become more apparent later.

We have seen several fields in southern Illinois in which 100% of the terminals showed damage and there were as many as 10 larvae per terminal. If 75% of the terminals are infested, it will be profitable to apply an insecticide, as damage will be serious. In states where weevils are more numerous, the recommendation is to treat when 30 to 50 percent of the terminals show damage, with an additional treatment prior to first cutting.

Insecticides should be applied within the next week in the southernmost counties. If infestations are severe, plan to make another application immediately upon removal of the first cutting of hay.

Parathion or azinphosmethyl (Guthion), 1/2 pound per acre, is effective, but because both are toxic they should be applied only by experienced applicators. Azinphosmethyl should not be applied within 21 days of harvest or more than once per cutting, and parathion should not be applied within 15 days of cutting.

If you wish to make your own applications and temperatures are above 60°, use 1 pound of malathion per acre or a commercially prepared diazinon-methoxychlor mixture. Use a minimum of 10 gallons of water per acre when spraying. There is no waiting period between application of malathion and harvest. Allow one week to elapse between application of diazinon-methoxychlor and harvest.

For pastures, use malathion or the diazinon-methoxychlor mixture. You can put animals right back on pastures sprayed with malathion, but allow one week to elapse when using diazinon-methoxychlor sprays.

If you wait too long to decide to treat, it may be wiser to cut the alfalfa early, remove the hay, and then treat the new growth.

Clover leaf weevil larvae are also green worms with stripes down their backs, but they feed on clovers and alfalfa during the night and hide in the ground cover during the day. In some instances they are abundant in western and southwestern Illinois, but no damage was observed this past week. If the weather remains warm, the crops will outgrow the damage and a fungus disease will kill these larvae.

No control is presently needed.

European corn borer survival was higher than normal this past winter. The area south of Highway 40 had the highest overwintering borer population in Illinois.

White grubs may injure the roots of crops planted in fields where corn or soybeans were severely damaged last year. These grubs will mature and stop eating by late May or early June.

If you plant corn in fields that had white grub damage last year, apply up to 3 pounds of actual aldrin or heptachlor per acre and disk it in immediately. If you plant soybeans in such a field, do not use aldrin or heptachlor; wait until after the first week in June to plant beans.

Spring cankerworms will be hatching soon and stripping the leaves of elms and other deciduous trees. Often these worms do not even wait for buds to unfold before starting to feed. They may partly or completely strip the foliage in a short time. For best results, spray the tree while the worms are still small with either carbaryl (2 lb. 50% wettable powder per 100 gal. water) or lead arsenate (4 lb. per 100 gal. water).

Clover mites are reported to be causing annoyance in some homes. These mites are tiny orange to black, moving specks about the size of the period at the end of this sentence. They cover furniture, walls, window sills, etc., in attempting to find their way outdoors. Pick them up with a vacuum cleaner or use a space spray containing 0.1% pyrethrin. Before fall, remove grass and weeds next to the foundation, leaving a strip of bare soil at least 18 inches wide. Replanting this strip to such flowers as zinnia, marigold, chrysanthemum, rose, and salvia, which do not attract clover mites, will prevent clover mite problems next year.

Caution: Before applying insecticides, read the labels carefully and follow all precautions. This not only will insure personal safety, but will also eliminate residue hazards.

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This weekly report was prepared by H. B. Petty, Steve Moore, Roscoe Randell, and Clarence E. White, Illinois Natural History Survey and University of Illinois College of Agriculture, in cooperation with the USDA Agricultural Service, Plant Pest Control Branch, from information gathered by entomologists and cooperators who send in weekly reports from their own localities.

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Cooperative Extension Service, University of
Illinois College of Agriculture in Cooperation With
the Illinois Natural History Survey and U.S.D.A.

FOR IMMEDIATE RELEASE April 29, 1966

INSECT SURVEY BULLETIN NO. 2

This second weekly bulletin of 1966 on the general insect situation in Illinois (fruit insects excepted), prepared by entomologists of the University of Illinois College of Agriculture, Illinois Natural History Survey and cooperating agencies, reports general trends in insect activity and suggests abbreviated control measures. Each individual should check his own fields to determine local conditions.

The alfalfa weevil is seriously damaging alfalfa fields in an area south of Highway 13. Infestation and damage vary considerably from field to field, but it is obvious that treatment is already too late for some fields. In many fields the terminal leaves are completely destroyed, and the larvae are now feeding on the lower leaves. Overwintering adults are still laying eggs and will continue to do so for several weeks. Some larvae are just beginning to pupate (feeding stops in this resting stage) but, with continued egg laying, populations of larvae can be expected to remain high for the next two or three weeks.

In the area between Highways 13 and 50, the infestations are lower, but some fields are showing as high as 50% terminal feeding.

Fields showing 75% or more terminal feeding and live larvae should be treated immediately. Serious damage can occur within a few days after the 75% feeding level is reached, so treatment must be made promptly. Some fields may need to be retreated in two or three weeks if problems recur. However, by that time it may be wiser to cut the alfalfa, remove the hay and then treat the new growth.

Parathion or azinphosmethyl (Guthion) at 1/2 pound per acre is effective, but because both are toxic they should be applied only by experienced applicators. Azinphosmethyl should not be applied within 21 days of harvest or more than once per cutting, and parathion should not be applied within 15 days of cutting.

If you wish to make your own applications and temperatures are preferably above 60°, use 1 pound of malathion per acre or a commercially prepared diazinon-methoxychlor mixture. Use a minimum of 10 gallons of water per acre when spraying. There is no waiting period between application of malathion and harvest. Allow one week to elapse between application of diazinon-methoxychlor and harvest.

For pastures, use malathion or the diazinon-methoxychlor mixture. You can put animals right back on pastures sprayed with malathion, but wait one week when using diazinon-methoxychlor sprays.

Clover leaf weevil are large, tightly curled green worms with white stripes down the back that hide at the base of both clover and alfalfa plants during the day. They can be easily confused with alfalfa weevil larvae. The clover leaf weevil larva has a tan to brown head, while the alfalfa weevil larva has a black head. Parasites and a fungus disease have in the past killed many clover leaf weevils, preventing serious buildups. The rapid growth of alfalfa and red clover is encouraging, as it enables plants to recover rapidly. No serious damage by this insect has yet been observed.

Armyworm moths are becoming more abundant. They migrate northward from the states to the south of Illinois. Migrations will continue for several weeks. This cool, wet weather is favorable for armyworms. The moths will be laying eggs for the next few weeks. The early moths lay eggs in timothy and bluegrass fields, while moths arriving later lay eggs in winter barley, rye, and wheat in that order.

It is too soon to predict the abundance of armyworms by the extent of moth flight. Accurate predictions can be made only by the number of worms in the fields by the middle to latter part of May.

Black cutworm moths have also been appearing at our light traps for the past two weeks. The wet weather favors worm development. It will be necessary to observe cornfields beginning in early to mid-May to determine the extent of cutworm populations. Low, wet areas and poorly drained sections in a field are the preferred sites for black cutworms.

Face flies were observed in low numbers on pastured cattle for the first time this week. These are overwintering adults that have recently come out of hibernation. They will mate and begin laying eggs for the first generation due to arrive about the end of May. Face fly numbers have been declining steadily since 1962, and there is no reason to expect any serious problems this year. Time will tell.

Aphids and mealy bugs are presently attacking some hawthorne trees. The aphids are small, green sucking insects that congregate and feed on developing buds and leaves. Tiny white cocoons on the trunk are an indication of mealy bugs. If the insects are numerous, a spray using 2 teaspoons of 50-57% malathion emulsion concentrate per gallon will effectively control both types of insects.

Ants are now entering homes in search of food. To prevent them from entering, spray the outside foundation with 2 percent chlordane or 1/2 percent dieldrin. Buy the liquid emulsion concentrate and dilute it with water to the proper strength. Spray the foundation to the point of runoff from the sill to the soil. Also spray two or three inches of soil next to the foundation wall. Spray cracks or expansion joints along porches and around steps. In houses with crawl spaces, it would be best to treat along the inside of the foundation wall as well as the outside. Do not spray near wells or cisterns. Do not spray shrubbery or flowers, as the oil may burn the foliage.

Caution: Before applying insecticides, read the labels carefully and follow all precautions. This not only will insure personal safety, but will also eliminate residue hazards.

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This weekly report was prepared by H. B. Petty, Steve Moore, Roscoe Randell, and Clarence E. White, Illinois Natural History Survey and University of Illinois College of Agriculture, in cooperation with the USDA Agricultural Service, Plant Pest Control Branch, from information gathered by entomologists and cooperators who send in weekly reports from their own localities.

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Cooperative Extension Service, University of
Illinois College of Agriculture in Cooperation With
the Illinois Natural History Survey and U.S.D.A.

FOR IMMEDIATE RELEASE May 6, 1966

INSECT SURVEY BULLETIN NO. 3

This third weekly bulletin of 1966 on the general insect situation in Illinois (fruit insects excepted), prepared by entomologists of the University of Illinois College of Agriculture, Illinois Natural History Survey, and cooperating agencies, reports general trends in insect activity and suggests abbreviated control measures. Each individual should check his own fields to determine local conditions.

Alfalfa weevils have seriously damaged alfalfa fields south of Highway 13. Overwintering adults will continue to lay eggs, so populations of larvae can be expected to remain high during the next three weeks. It is too late to treat fields where the terminal leaves and lower leaves of the plants are almost completely destroyed. Cut the alfalfa and remove the hay, then immediately apply an insecticide to protect the new growth. The sooner you remove the hay after cutting, the better the weevil control will be. You will remove many eggs and kill many larvae.

In the area between Highways 13 and 50, infestations are lower, and feeding damage is not as noticeable. Each field must be rated on its own infestation. Fields showing 75 percent or more terminal feeding should be treated immediately if live larvae are present. Since serious damage can occur within a few days after the 75-percent feeding level is reached, treatment must be made promptly, but it may be wiser at this stage of growth to cut the alfalfa a little earlier than normal, remove the hay, and then treat the new growth.

It is almost too late to apply parathion as most first-cutting alfalfa is within 15 days of harvest. If temperatures are above 60°, use 1 pound of malathion per acre or a commercially prepared diazinon-methoxychlor mixture. Use a minimum of 10 gallons of water per acre when spraying by ground. No waiting period is required between application of malathion and harvest. Allow one week to elapse between application of diazinon-methoxychlor and harvest.

For pastures, use malathion or the diazinon-methoxychlor mixture. You can put animals right back on pastures sprayed with malathion, but wait one week when using diazinon-methoxychlor sprays.

This past week we visited experimental control plots at the University of Kentucky. The weevils in the untreated areas had turned to alfalfa stems for food as all the leaves had already been eaten. We are convinced that this pest will be a serious alfalfa problem in Illinois.

Alfalfa growers south of Highway 13 have seen severe damage this year. Damage to alfalfa south of a line from St. Louis to Champaign will be severe and general in 1967.

Clover leaf weevils are green worms with white stripes down their backs. They resemble alfalfa weevils but have brown heads instead of black and are found in the soil debris during the day; alfalfa weevils are up on the plants during the day.

No economic damage from the clover leaf weevil is expected since the good growing conditions enable the plants to rapidly outgrow the feeding. Also moisture and moderate temperatures are favorable for the spread of a fungus disease that kills these weevils.

Spittlebugs have been hatching in northern Illinois but economic damage is not expected.

Pea aphid populations have not as yet begun to increase in alfalfa fields. In fact, these aphids are present only in low numbers thus far.

Armyworm and black cutworm moths continue to be abundant. They are or will soon be depositing eggs, but worm abundance cannot be predicted now.

White grubs can easily be found during seedbed preparation in those fields where they damaged soybeans or corn last year. They are hungry and will eat the roots of plants as fast as they develop and may even chew on the seeds before germination.

Aldrin or heptachlor, 3 pounds per acre, should be applied to corn soil during seedbed preparation to control grubs in these occasional fields. Do not use these two insecticides for insect control in soybean fields. Do not plant soybeans in these grub-infested fields until early June.

The Homeowner's Insects of the Week

Bean leaf beetles are damaging newly emerging garden beans. These beetles are green, yellow, tan, or red insects with black bands around the outer edges of their wing covers. They usually have black spots on their backs. The beetles feed on the undersides of the leaves, eating irregular holes in the leaves. Sometimes plants are completely defoliated in a few days time. These adults will continue to feed for several weeks.

Carbaryl (Sevin) as a spray or ready-prepared dust is effective. For sprays use 2 tablespoons of the 50 percent wettable powder per gallon of water. A second application may be needed if more beetles appear. Good leaf coverage, on both under and upper sides, is important for best control.

Ants are now entering homes in search of food. Now is an ideal time to spray the outside foundation with 2 percent chlordane or 1/2 percent dieldrin. Buy the liquid emulsion concentrate and dilute it with water to the proper strength. Spray the foundation from the sill to the soil to the point of runoff. Also spray 2 or 3 inches of soil next to the foundation wall. Spray cracks or expansion joints along porches and around steps. In houses with crawl spaces, it is best to treat the inside of the foundation wall as well as the outside. Do not spray near wells or cisterns. Do not spray shrubbery or flowers, as the oil may burn the foliage. This treatment will control other insects that migrate into the house from the lawn and eliminates the need for sprays in the house.

Caution: Before applying insecticides, read the labels carefully and follow all precautions. This will not only insure personal safety, but will also eliminate residue hazards.

This weekly report was prepared by H. B. Petty, Steve Moore, Roscoe Randell, and Clarence E. White, Illinois Natural History Survey and University of Illinois College of Agriculture, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch, from information gathered by entomologists and cooperators who send in weekly reports from their own localities.

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Cooperative Extension Service, University of
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FOR IMMEDIATE RELEASE May 13, 1966

INSECT SURVEY BULLETIN NO. 4

This fourth weekly bulletin on the general insect situation in Illinois (fruit insects excepted), prepared by entomologists of the University of Illinois College of Agriculture, Illinois Natural History Survey and cooperating agencies, reports general trends in insect activity and suggests abbreviated control measures. Each individual should check his own fields to determine local conditions.

The Present Farm Insect Problems

Alfalfa weevil feeding may have been slowed down a little by cold weather and the cold snap may have killed some larvae, but it was not enough to alleviate the weevil problem.

Many larvae are now pupating, and some new adults have already emerged in southern Illinois. They will feed on the alfalfa for a week or two and then remain quiet during the heat of summer; in the fall they will become active and deposit some eggs before winter hibernation. Next March they will come out of hibernation, feed, and lay eggs.

This year it is already too late to save the first cutting in heavily infested fields south of Route 13. Here, cut the hay, remove it, and immediately spray to protect the second growth.

This week we saw economic damage as far north as Robinson on the east to Clinton County (Carlisle) on the west. North of this line, weevil feeding is noticeable but not of economic importance.

If 75 percent of the terminals show evidence of feeding, you may still want to apply an insecticide, but applications should be made right now. If you do not apply one immediately, harvest the crop a little earlier than normally, remove the hay, and then protect the new growth with an insecticide.

For first growth, use one pound of malathion per acre or a commercially prepared diazinon-methoxychlor mixture when temperatures are above 60°. Use a minimum of 10 gallons of water per acre when spraying by ground. No waiting period is required between application of malathion and harvest. Allow one week to elapse between application of diazinon-methoxychlor and harvest. For pastures, use malathion or the diazinon-methoxychlor mixture. You can put animals right back on pastures sprayed with malathion, but wait one week when using diazinon-methoxychlor sprays.

After the first cutting is removed, azinphosmethyl (Guthion), methyl parathion, or parathion can be applied by those equipped to follow safety precautions in handling these materials. Malathion and diazinon-methoxychlor may also be used.

Pea aphid numbers in alfalfa fields remained low this week.

English grain aphids are reported to be abundant on the undersides of wheat leaves. No control need be applied unless the plants show wilting. After wheat heads appear, it takes an average of 30 to 50 aphids per head to cause measurable damage. Ordinarily the aphids will leave the wheat head as it enters the dough stage. If control is absolutely necessary, use one pound of malathion per acre. Although you can apply malathion to within one week of harvest, that would be far too late for profitable control of grain aphid. Operators equipped with protective clothing can apply one-fourth pound of parathion to within 15 days of harvest.

Flies thus far have not been a problem on livestock farms. However, the lesser house fly is now appearing in numbers in poultry houses. Gather the eggs, cover the water and feed troughs, and apply a one percent ronnel spray to the walls and ceilings for control.

The Upcoming Farm Insect Problems

Variegated cutworms are present in some legume fields in south-central and southern Illinois. All worms found this week were very small. Later these greyish worms with yellow or white dots down their backs will feed on the leaves at night and hide in the debris during the day. Their feeding does not become apparent until just before time to cut clover for hay. Bales of hay often have dozens of these worms underneath them. In addition to defoliation of first growth, the shoots of the second growth may be seriously damaged.

Armyworm moths are still present, and larger flights are expected. It will soon be time to examine lodged spots in wheat fields. Shake the plants vigorously, and look on the ground underneath. If small striped worms are present, they will probably be armyworms. Do not use this count as a field average. If you find no armyworms in lodged spots, no further examination will be necessary. If you find lots of them, make a field check. No control is needed unless the population averages six or more per linear foot. Even then, do not apply insecticides until the worms are about one-half inch long.

Black cutworm moths have been present for several weeks, and eggs collected from these moths in late April have now hatched. We can expect these tiny cutworms to appear in cornfields any time from now on. Examine soil in and around corn plants in the low spots. The next three weeks will be critical for effective control. Applications of 3 pounds of toxaphene, 2 pounds of carbaryl (Sevin), or 2 to 3 pounds of diazinon, directed at the base of the plants, will control the small worms. Worms that are 1 to 2 inches long are very difficult to control.

After the damage has been done, it is too late to do anything but apply a soil insecticide like aldrin or heptachlor at 3 pounds per acre, disk it in, and replant. This year let's get the cutworms early.

Pupation of overwintering corn borer larvae has begun as far north as Decatur.

The Homeowner's Present Insect Problems

Aphids are now abundant on roses and some shrubs. Malathion sprays will control them.

Fungus flies or gnats will soon be present in some numbers. A common sight will be to find these flies clinging to upper leaves of plants. Most of them will be dead or dying. The young or maggots matured in rotting plant material in the soil and emerged as harmless flies or gnats.

Caution to Those Using Insecticides

Before applying insecticides, read the labels carefully and follow all precautions. This will not only insure personal safety, but will also eliminate residue hazards.

This weekly report was prepared by H. B. Petty, Steve Moore, Roscoe Randell, and Clarence E. White, Illinois Natural History Survey and University of Illinois College of Agriculture, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch, from information gathered by entomologists and cooperators who send in weekly reports from their own localities.

Sent by: H. B. Petty
Extension Specialist

Cooperative Extension Service, University of
Illinois College of Agriculture in Cooperation With
the Illinois Natural History Survey and U.S.D.A.

FOR IMMEDIATE RELEASE May 20, 1966

INSECT SURVEY BULLETIN NO. 5

This fifth weekly bulletin on the general insect situation in Illinois (fruit insects excepted), prepared by entomologists of the University of Illinois College of Agriculture, Illinois Natural History Survey and cooperating agencies, reports general trends in insect activity and suggests abbreviated control measures. Each individual should check his own fields to determine local conditions.

Present Farm Insect Problems

Alfalfa weevil larvae have reached their peak and are now pupating rapidly; some adults have already emerged. Although these adults will feed, they will not lay eggs until this fall or next spring. Oddly enough, some of the old overwintering adults are still depositing eggs, and newly hatched larvae can be found. We will therefore continue to see some green larvae on alfalfa for another three weeks.

Many fields of alfalfa south of Highway 13 were protected with malathion sprays. Where no insecticide was applied to the first growth, yields were very low. However, in some of these fields malathion was applied as soon as the first cutting was removed. Results appear to be good, and the plants are growing rapidly. If malathion was applied when temperatures were below 60°, inspect carefully to be sure that enough weevils were killed to protect the new growth. Second growth, if not treated, may be seriously damaged; treat if new growth is being devoured.

The situation is spotted in the area north of Highway 13 to a line from Robinson west to about St. Louis. Some fields should already have been treated, but weevil feeding is just now approaching the peak. Some fields will still profit from an insecticide application.

If 75 percent of the terminals show evidence of feeding, apply an insecticide. If you do not apply one immediately, harvest the crop a little earlier than normally; remove the hay and then protect the new growth with an insecticide.

For first growth, use one pound of malathion per acre or a commercially prepared diazinon-methoxychlor mixture when temperatures are above 60°. Use a minimum of 10 gallons of water per acre when spraying by ground. No waiting period is required between application of malathion and harvest. Allow one week to elapse between application of diazinon-methoxychlor mixture and harvest. You can put animals right back on pastures sprayed with malathion, but wait one week when using diazinon-methoxychlor sprays.

After the first cutting is removed, azinphosmethyl (Guthion), methyl parathion or parathion can be applied by those equipped to follow safety precautions in handling these materials. Malathion and diazinon-methoxychlor may also be used.

Variegated cutworms are still present in clover fields. They are up to one-half inch long. No damage has yet been observed. If damage occurs, it will not be for a few more weeks.

Grasshoppers are now hatching. Tiny 'hoppers can be found in southern Illinois, but in low numbers. No general damage is expected.

Pea aphid populations in alfalfa remain low throughout the state; natural enemies are becoming more common.

Corn borer pupation ranges from 25 to 70 percent in southern Illinois, and a few moths have emerged. Since survival of first-generation borers is low on mid-season to late-planted corn and the crop is later than normal, damage by first-generation corn borers is not expected in the southern half of the state.

Since none of the wintering larvae in northern Illinois have pupated, no predictions can be made.

Corn flea beetles are appearing on corn plants in southern Illinois. As soon as plants appear, watch for these tiny black beetles on the leaves. When extremely abundant, they can damage stands. If necessary, apply 2 pounds of carbaryl (Sevin) or 1 1/2 pounds of toxaphene per acre as a spray banded over the row.

English grain aphids are present in small numbers in most grain fields but are not damaging the wheat. No control is recommended.

Upcoming Farm Insect Problems

Armyworms are present in wheat fields in the southern one-half of Illinois. They are still small and are not yet numerous enough to be a problem, but they may increase as more eggs are laid and hatch.

To find armyworms, examine lodged spots. Shake the plants vigorously, and look on the ground underneath. If small striped worms are present, they will probably be armyworms. Do not use this count as a field average. If you find no armyworms in lodged spots, no further examination will be necessary. If you find lots of them, make a field check. No control is needed unless the field population averages six or more per linear foot. Even then, do not apply insecticides until most of the worms are about one-half inch long or longer.

Do not confuse armyworms with the transparent green to yellow sawflies also found in wheat. An armyworm has five pairs of abdominal prolegs in addition to the three pairs of true legs on the front half of the body. Sawflies have six or more pairs of prolegs in addition to the three pairs of true legs. Sawflies do not damage wheat plants enough to require control.

Toxaphene, 1 1/2 pounds per acre, may be applied to small grains without any restrictions on use of the grain. However, do not feed the straw to dairy animals or livestock fattening for slaughter. Do not apply toxaphene to fields adjacent to dairy pastures or hay crops. Do not contaminate fish-bearing waters with toxaphene. Carbaryl (Sevin), 1 pound per acre, may be applied to fields adjacent to dairy pastures, but not after the heads have begun to appear. Trichlorfon (Dylox), 1 pound per acre, may be used to within 21 days of harvest, but the straw

cannot be used for livestock feed and should not be applied adjacent to dairy pastures or hay crops.

Black cutworm moths normally deposit eggs in overflow areas or low, damp spots in fields. This year there are low, damp spots in most cornfields, and we may have a peculiar condition. The moths now present may have been scattering a few eggs over wide areas in many fields or concentrating them in spots. If they are concentrating their egg-laying, it may be too wet in the usual low spots and they may lay eggs in higher, ordinarily well-drained spots that this year are remaining wet. Such spots might never before have been bothered with black cutworms.

Since little corn is up to help us appraise the situation, carefully examine areas in fields if you find cut plants, which may occur almost anywhere this year.

The Homeowner's Present Insect Problems

Aphids may soon appear on cabbage and related cole crops as well as on tomatoes; they transmit certain tomato diseases. Apply malathion to control them. Watch for white cabbage butterflies around cabbage and related plants. These are the adults of the cabbage worms. Early application of carbaryl (Sevin) when the worms are small makes control easy.

Bagworms have begun to hatch in southern Illinois and will soon hatch in central Illinois. As soon as you see lots of the tiny bags on trees, apply carbaryl, diazinon, lead arsenate or malathion. The label lists plants that will not tolerate the insecticide. Follow these precautions.

European pine shoot moth is damaging on some pine shrubs and trees. Small brown larvae with black heads are boring into the base of the needles on new growth of pines, especially Mugho. For control, use a spray containing 3 tablespoons of 25 percent DDT per gallon of water. This application may be late for maximum control. Apply again in mid- to late June, when the next generation of larvae appears.

Chiggers may be real scratchers very soon. This wet, damp weather favors their development. Use a good chigger repellent around the ankles and waist if you are going on an outing. Upon return, take a good, hot, soapy shower or bath. These precautions will almost eliminate chigger bites.

Caution to Those Using Insecticides

Before applying insecticides, read the labels carefully and follow all precautions. This will not only insure personal safety, but will also eliminate residue hazards.

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This weekly report was prepared by H. B. Petty, Steve Moore, Roscoe Randell and Clarence E. White, Illinois Natural History Survey and University of Illinois College of Agriculture, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch, from information gathered by entomologists and cooperators who send in weekly reports from their own localities.

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Cooperative Extension Service, University of
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the Illinois Natural History Survey and U.S.D.A.

FOR IMMEDIATE RELEASE May 27, 1966

INSECT SURVEY BULLETIN NO. 6

This sixth weekly bulletin on the general insect situation in Illinois (fruit insects excepted), prepared by entomologists of the University of Illinois College of Agriculture, Illinois Natural History Survey and cooperating agencies, reports general trends in insect activity and suggests abbreviated control measures. Each individual should check his own fields to determine local conditions.

Present Farm Insect Problems

Alfalfa weevil larvae are decreasing as they pupate. They will soon emerge as adults. Damage will continue for about two weeks yet, but will then decline rapidly.

In general, it is now too late to spray first-growth alfalfa. Cut it, remove the hay and spray the new growth immediately. Use malathion or a commercial mixture of diazinon and methoxychlor. Allow one week to elapse between application and harvest when using diazinon or methoxychlor; no waiting period is needed for malathion. Azinphosmethyl (Guthion) or methyl parathion can be used for weevil control by those equipped to follow safety precautions for personal protection when handling and applying the more toxic insecticides.

Wireworms have begun to damage some cornfields not treated with aldrin or heptachlor at or before planting. The round, wirelike, brown, hard-shelled worms hollow out seeds or drill holes in the base of stalks, causing death of the plant.

Little can be done now to protect these plantings. Occasionally 1 1/2 pounds of actual aldrin or heptachlor in 20 gallons of water per acre as a spray directed at the base of the plant will reduce the worm population enough to save the stand. Cultivate immediately.

If the stand is lost, apply 2 pounds of aldrin or heptachlor per acre, disk in immediately and replant. A spray may give quicker kill than granules. Do not apply when drift occurs.

Black cutworms are still an unknown quantity. For the next three weeks, inspect low spots in cornfields regularly. If corn plants are being cut off and worms are still small, apply 3 pounds of toxaphene per acre and direct the spray at the base of the plants. Cultivate immediately to cover the spray deposit. On dairy farms, use 2 pounds of carbaryl (Sevin) per acre. This treatment will help to control small worms but will not kill the large cutworms.

Sod webworms feed on corn after grass sods; they closely resemble black cutworms. Examination of the worm will reveal small black spots on the grey body. In general, they are lighter colored than black cutworms. They also spin a web. Aldrin and heptachlor do not control this pest. It may be necessary to apply 1 pound of carbaryl (Sevin) as a spray, directed at the base of the plant.

Armyworms are reported to be abundant in some fields of wheat, but they are still small. Check fields carefully to determine need for control before making any application.

To find armyworms in wheat fields, first examine lodged spots. Shake the plants vigorously, and look on the ground underneath. If small, striped worms are present, they will probably be armyworms. Do not use this count as a field average. If you find no armyworms in lodged spots, no further examination will be necessary. If you find lots of them, make a field check. No control is needed unless the field population averages six or more per linear foot. Even then, do not apply insecticides until most of the worms are over one-half inch long.

Do not confuse the striped armyworms with the transparent yellow to green sawflies. An armyworm has five pairs of abdominal prolegs; sawflies, six or more pairs. Sawflies do not damage wheat plants enough to require control.

Apply 1 1/2 pounds of toxaphene for armyworm control in small grains. There are no restrictions on use of grain. Do not feed the straw to dairy animals or livestock fattening for slaughter. Do not apply toxaphene to fields adjacent to dairy pastures or hay crops. Do not contaminate fish-bearing waters with toxaphene. We have suggested that dairy farmers not use chlorinated hydrocarbons on their farms. Toxaphene belongs to this family of chemicals. However, the official label permits its use on dairy farms. If it is used on or adjacent to dairy farms, avoid drift onto pastures and hay crops. Trichlorfon (Dylox), an organic phosphate insecticide at 1 pound per acre, may be used to within 21 days of harvest, but the straw cannot be used for livestock feed.

Malathion, 1 1/4 pounds per acre, may be beneficial for armyworm control in areas where drift may be critical. It may be used on grass pastures and hay right up to the day of harvest. Allow one week to elapse between application and harvest of grain.

Examine grassy pastures and hay fields. If armyworms are extremely abundant and devouring the grass, apply 1 pound of carbaryl (Sevin) per acre. There is no waiting period between application and harvest. Warn beekeepers that you are applying carbaryl.

Wheat growers often panic at the word armyworm. Do not be stampeded into applying insecticides unless necessary. This year the wheat may be mature enough to keep the leaf stripping of armyworms from affecting yield, and the worms may be forced to migrate. If migration occurs, watch adjacent crops. However, as the leaves mature, the worms may begin to feed on the stems, causing the heads to fall to the ground.

Also remember that small armyworms do little damage. The worm eats about 80 percent of its food after it is over 3/4 inch long.

Two factors may help this year. Armyworms are killed more rapidly by diseases when temperatures are high. Since armyworm development is about 10 days later than normal, this disease may be a factor. If you find dead, soft, mushy-looking worms, they have died from this disease. Watch for little white capsules on the backs of armyworms. These capsules are fly eggs, and the maggot that hatches penetrates the body of the worm, killing it. Predatory insects are also numerous in wheat fields and are killing some armyworms.

Upcoming Farm Insect Problems

Corn borer moth emergence has reached 20 percent in the extreme south; pupation in central Illinois has reached 40 to 50 percent, and first emergence occurred this week. In northern Illinois, no pupation or moth emergence has occurred.

In general, corn borer development in the northern half of Illinois has been delayed about the same extent as corn. The situation parallels that of 1956, but fortunately we have less than one-tenth as many overwintering borers. Therefore, we can expect an increase in borer populations this year, but first-generation borers will not be sufficiently abundant to cause severe damage.

Borer development in the southern half of Illinois is nearer normal, while the corn is more delayed. Therefore, we expect low survival of first-generation borer.

Observe the occasional early-planted corn, which is more advanced than in any other fields in the community in early June in southern Illinois to early July in northern Illinois. Corn borer moths will concentrate their egg laying in these few fields, and severe damage may occur.

Leafhoppers that feed on alfalfa are migrating into Illinois from the south. This tiny, green, wedge-shaped "gnat" is found in large numbers in alfalfa fields. It sucks sap from the plants and injects a toxin. The plants stunt and turn yellow or purple. The intensity and location of the infestation are not yet known.

Pea aphid populations are still low in alfalfa for this time of year, but numbers have increased since last week. This insect should not cause a problem this year.

The Homeowner's Present Insect Problems

Clover mites can still be found in homes. Now is the time to remove sod for an 18- to 24-inch strip around your house. Plant flowers or shrubs. Mites rarely migrate more than this distance except in grass or clover.

Bagworms can be controlled with sprays of carbaryl, diazinon, lead arsenate or malathion. The label lists plants that will not tolerate the insecticide. Follow these precautions. Control these insects while they are small and before the damage has been done. Begin treatments this week in southern Illinois.

European pine sawflies are defoliating pine, particularly Scotch and red pine. These black headed, grayish-green larvae, which like to feed together in clusters, will continue to cause injury for another week.

The worms are effectively controlled by spraying the trees with carbaryl (Sevin), using 2 tablespoons of the 50 percent wettable powder per gallon of water.

Spruce spider mite eggs have hatched, and now is a good time to spray evergreens before damage becomes evident. If evergreens have a history of spider mite problems, spray with dicofol (Kelthane) at the rate of 2 teaspoons of 18.5 percent emulsion concentrate per gallon of water or aramite at the rate of 1 teaspoon of 15 percent wettable powder per gallon of water.

Caution to Those Using Insecticides

Before applying insecticides, read the labels carefully and follow all precautions. This will not only insure personal safety, but will also eliminate residue hazards.

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This weekly report was prepared by H. B. Petty, Steve Moore, Roscoe Randell and Clarence E. White, Illinois Natural History Survey and University of Illinois College of Agriculture, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch, from information gathered by entomologists and cooperators who send in weekly reports from their own localities.

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Cooperative Extension Service, University of
Illinois College of Agriculture in Cooperation With
the Illinois Natural History Survey and U.S.D.A.

FOR IMMEDIATE RELEASE June 3, 1966

INSECT SURVEY BULLETIN NO. 7

This seventh weekly bulletin on the general insect situation in Illinois (fruit insects excepted), prepared by entomologists of the University of Illinois College of Agriculture, Illinois Natural History Survey and cooperating agencies, reports general trends in insect activity and suggests abbreviated control measures. Each individual should check his own fields to determine local conditions.

Present Farm Insect Problems

Armyworms are present in potentially damaging numbers in occasional rank stands of wheat, barley, rye and grass in the southern half of Illinois. Some fields of thick wheat averaged as many as 5 or 6 worms per linear foot of drill row, but this is still a borderline count for treatment. In lodged spots, counts were as high as 11 worms per linear foot of row. The infestation is spotted and is not so severe as in 1964, when 15 to 30 worms or more per foot of row were common.

South of Highway 50, armyworms are large enough for treatments to be applied immediately. In the area between Highways 50 and 9, most of the worms are still small (1/4 to 1/2 inch) and treatments should not be applied until June 10.

Damage from mice or other rodents is noticeable in wheat fields. They cut the stems in 3- or 4-inch lengths and leave them in piles. This is not the work of armyworms, which strip the leaves and beards and sometimes cut the stem just below the head.

The greatest mistake in armyworm control is to panic and apply insecticides too soon or when they are not necessary. Do not use insecticides unless there are enough worms to justify treatment. Do not make applications unless most of the worms are 1/2 to 1 inch long. An armyworm eats 80 percent of its food supply in the last four or five days of the worm stage. Predators, parasites and diseases also take their toll of small armyworms and can lessen the threat in a few days. Occasional off-colored armyworms suspected of having disease were found this week.

If there are six or more armyworms 1/2 to 1 inch long per linear foot of drill row, treatment is suggested.

Apply 1 1/2 pounds of toxaphene to control armyworms in small grains. There are no restrictions on use of the grain. Do not feed the straw to dairy animals or to livestock fattening for slaughter. Do not apply toxaphene to fields adjacent to dairy pastures or hay crops. Do not contaminate fish-bearing waters with toxaphene. We have suggested that dairy farmers not use chlorinated hydrocarbons on their farms. Toxaphene belongs to this family of chemicals, but the official label permits its use on dairy farms. If you use it on or adjacent to a dairy farm, avoid drift onto pastures and hay crops. Trichlorfon (Dylox), an

organic phosphate insecticide at 1 pound per acre, may be used to within 21 days of harvest, but the straw cannot be used for livestock feed.

Malathion, 1 1/4 pounds per acre, may be beneficial for controlling armyworms in areas where drift may be critical. It may be used on grass pastures and hay right up to the day of harvest. Allow one week to elapse between application and harvest of grain.

Examine grassy pastures and hay fields. If armyworms are extremely abundant and are devouring the grass, apply 1 pound of carbaryl (Sevin) per acre. There is no waiting period between application and harvest. Warn beekeepers that you are applying carbaryl.

Black cutworms were found in cornfields this week. In the central section, the worms were 1/2 to 3/4 inch long, or about one-third grown. They will feed for another two weeks before pupating. Most of the corn plants were cut or eaten above the growing point or heart and will recover from the damage. Check the low spots in cornfields regularly, and watch for missing plants, cut plants or wilting plants. The small gray to black worm can usually be found in the soil near the damaged stalk.

If the stand is being threatened or low spots in a field are seriously damaged, apply 3 pounds of toxaphene per acre and direct the spray at the base of the plants. Cultivate immediately to cover the spray deposit. Results will depend to some extent on the soil moisture and on rain immediately after spraying. If conditions remain dry, the worms will be down several inches in the soil and control will be poor.

On dairy farms, use 2 pounds of carbaryl (Sevin) per acre. This treatment will help to control small worms but will not kill the large cutworms.

Wireworms continue to damage corn in some areas. Little can be done to protect the planting. If the stand is lost, apply 2 pounds of aldrin or heptachlor per acre, disk in immediately and replant. A spray may give quicker kill than granules. Be careful to avoid drift when spraying.

Alfalfa weevil damage is about over as worms continue to mature, stop feeding and pupate. In the area south of Highway 50, spraying of new growth (second cutting) may still be justified in occasional fields. Watch the new growth closely for several days after cutting. If new shoots do not develop, look for the small green larvae or the 1/4-inch brown snout beetle adults of the alfalfa weevil. If either the larvae or adults are numerous, use malathion or a commercial mixture of diazinon and methoxychlor (Alfatox). Allow one week to elapse between application and harvest when using diazinon or methoxychlor; no waiting period is needed for malathion. Azinphosmethyl (Guthion) or methyl parathion can be used for weevil control by those equipped to follow precautions for personal safety when handling and applying the more toxic insecticides.

Upcoming Farm Insect Problems

Corn borer pupation is complete in the southern one-third of Illinois; 20 to 50 percent of the moths have emerged, and egg laying has started. Egg laying will continue for another two or three weeks. Where needed in field corn, insecticides should probably be applied beginning the week of June 12.

Observe the occasional early-planted corn that is more advanced than other corn in the area.

To decide whether an insecticide can be profitably applied, measure the tassel ratio of the field and count the percent of plants with recent whorl leaf feeding. To determine the tassel ratio, measure the height of the plant with leaves extended; split the stalk open and measure from the tip of the developing tassel to the base of the plant. Divide the tassel height by the plant height, and multiply by 100. This figure is the tassel ratio. If the tassel ratio is at least 35 (preferably 40 to 45) and at least 75 percent of the plants show recent whorl feeding, then treatment is justified. Use 1 pound of actual diazinon in granular form per acre or 1 1/2 pounds of carbaryl (Sevin) as granules. For spraying, use the same amount of actual insecticide per acre, and direct the spray to the upper third of the plant. Aerial applications should be granules, not sprays or dusts. Follow the label precautions in harvesting and feeding treated corn. DDT can be used as granules or sprays, but not on or adjacent to dairy farms.

In central Illinois moth emergence is just beginning, while in northern Illinois pupation is just beginning. Continued dry conditions at this time could delay moth emergence and increase the survival of hatching borers, since the corn would then be more mature. However, we are still not expecting severe damage from first-generation corn borer in this northern section.

Corn flea beetles are present in cornfields in the southern half of the state. They are tiny, shiny black jumping beetles that drop to the ground at the slightest disturbance. They strip the green from the surface of the leaves, leaving white stripes. If plants are being killed, apply 1 1/2 pounds of toxaphene or 3/4 pound of carbaryl (Sevin) per acre as a band treatment over the row.

Alfalfa leafhopper adults, which have migrated into Illinois from the south, are laying eggs in alfalfa fields. These small, green wedged-shaped insects that skid sideways when disturbed cause yellowing of second and third cutting of alfalfa. They not only cut yields, but also reduce the quality of the hay by lowering its vitamin A and protein content. No control measures are recommended at this time.

The Homeowner's Insect Problems

Bagworms are now hatching in central Illinois. For best control, plan to spray evergreens about June 15 in the central area. The eggs will all be hatched by then and the worms will still be small. June 30 is the target date for bagworm sprays in northern Illinois. Spraying should already be under way in southern Illinois. Carbaryl (Sevin), malathion, diazinon or lead arsenate is effective as a spray. Follow label directions and check the plants that may be injured if sprayed with the insecticide you are using.

The following three insects were observed in the central section this week, and control is now timely for this section and the southern section. Wait two weeks in the northern section.

Oystershell scales have hatched, and the new crawlers are getting ready to set up housekeeping on shrubs like lilac, dogwood, etc. They can be controlled by spraying with malathion. Use 2 teaspoons of the 50-57% emulsion concentrate per gallon of water.

Hackberry psyllids, which cause small pin-like blisters, are present on leaves. A spray of malathion or diazinon will control psyllids in the galls. Follow label directions for mixing and use precautions while spraying.

Lilac borers are emerging and laying eggs. Spray the lower stems and larger branches (not the leaves) with DDT. To mix, use 3 tablespoons of 25 percent DDT emulsion concentrate per gallon of water. Repeat the treatment in about two weeks.

Caution to Those Using Insecticides

Before applying insecticides, read the labels carefully and follow all precautions. This will not only insure personal safety, but will also eliminate residue hazards.

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This weekly report was prepared by H. B. Petty, Steve Moore, Roscoe Randell and Clarence E. White, Illinois Natural History Survey and University of Illinois College of Agriculture, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch, from information gathered by entomologists and cooperators who send in weekly reports from their own localities.

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Cooperative Extension Service, University of
Illinois College of Agriculture in Cooperation With
the Illinois Natural History Survey and U.S.D.A.

FOR IMMEDIATE RELEASE June 10, 1966

INSECT SURVEY BULLETIN NO. 8

This eighth weekly bulletin on the general insect situation in Illinois (fruit insects excepted), prepared by entomologists of the University of Illinois College of Agriculture, Illinois Natural History Survey and cooperating agencies, reports general trends in insect activity and suggests abbreviated control measures. Each individual should check his own fields to determine local conditions.

Present Farm Insect Problems

Armyworms continue to hold the spotlight, and infestations are more general than was originally expected. In some localized areas infestations are severe, and armyworms are migrating from rank grains and grasses into corn. Migrations may be more prevalent than usual this year, since the worms are behind in their development and they move out as the grain begins to dry. Watch adjacent cornfields closely, as stands can disappear overnight under the onslaught of a hungry band of worms.

In the area south of Highway 50, the worms are maturing rapidly and time for treatment will be past sometime this week (June 12). In the area between Highways 50 and 9, most of the worms are still only one-half to two-thirds grown, and treatments will be needed until at least the end of this week (June 18). Examine thick stands of wheat, barley, rye and grasses; if there are six or more armyworms 1/2 inch long or longer per linear foot of drill row, treatment is suggested.

Apply 1 1/2 pounds of toxaphene to control armyworms in small grains. At the first signs of migration, treat a strip in the cornfield and a strip into the field from which the worms are migrating. Use 2 pounds of toxaphene per acre, but do not feed the straw or corn forage to dairy animals or to livestock fattening for slaughter. There are no restrictions on use of the grain. Do not apply toxaphene to fields adjacent to dairy pastures or hay crops. Do not contaminate fish-bearing waters with toxaphene. We have suggested that dairy farmers not use chlorinated hydrocarbons on their farms. Toxaphene belongs to this family of chemicals, but the official label permits its use on dairy farms. If you use it on or adjacent to a dairy farm, avoid drift onto pastures and hay crops.

Malathion, 1 1/4 pounds per acre, provides only fair control, but it may be beneficial for controlling armyworms in areas where drift may be critical.

If armyworms are extremely abundant and are devouring the grass, apply 1 pound of carbaryl (Sevin) per acre. There is no waiting period between application and harvest. Warn beekeepers that you are applying carbaryl.

Black cutworms continue to damage corn. Many fields show slight cutworm damage, but only an occasional field is seriously affected. The moths that were active during the cool, wet weather a few weeks ago spread their eggs over many fields. Check low spots in cornfields regularly, and watch for missing, cut or wilting plants. This small gray to black worm can usually be found in the soil

near the damaged stalk. If the stand is being threatened or low spots in a field are seriously damaged, apply 3 pounds of toxaphene per acre and direct the spray at the base of the plants. Cultivate immediately to cover the spray deposit.

On dairy farms, use 2 pounds of carbaryl (Sevin) per acre. This treatment will help to control small worms but will not kill the large cutworms.

Results with this insecticide will depend to some extent on soil moisture and on rain immediately after spraying. Do not expect a spectacular kill of cutworms overnight. Evaluate control three or four days after treatment.

If replanting is necessary, apply and disk in 2 pounds of aldrin or heptachlor per acre for corn. Do not use aldrin or heptachlor soil treatments if soybeans are to be planted.

White grubs are damaging corn, soybeans and to a lesser extent small grains and forages. These large (one inch or more) third-year cycle grubs will stop feeding and pupate within another week or ten days. They are from about one to six inches deep in the soil, and nothing can be done to protect the planting. These grubs caused injury in these same fields during the 1965 growing season, when they were in the second year of development. The fields had not been treated in previous years with a soil insecticide.

It is now best to wait out the feeding of the grubs. Warm, wet weather, which enhances plant growth, would be helpful; continued dry weather would not. Cultivating or hoeing would be of little benefit and might move the grubs that are between the rows closer to the plants.

Common stalk borers have been tunneling in the whorl leaves of occasional corn plants and stalks of oats. These striped borers are whitish-brown with a distinct purple to black band around the middle of their bodies. The unfolding leaves of corn have irregular holes from feeding, while the heads of oats turn white prematurely. Damage occurs in plants along fence rows, ditchbanks and grass waterways or where there was a weed problem the previous year. Injury is of little consequence, and by the time the worms are found it is too late for chemicals to be effective. Keep weeds under control in August and September to help reduce the problem for next year.

Upcoming Farm Insect Problems

Corn borer emergence is about complete in the southern one-third of Illinois, and egg laying is well under way. Egg laying will continue for another week or ten days.

Observe the occasional early-planted corn that is more advanced than other corn in the area.

To decide whether an insecticide can be profitably applied, measure the tassel ratio of the field and count the percent of plants with recent whorl leaf feeding. To determine the tassel ratio, measure the height of the plant with leaves extended; split the stalk open and measure from the tip of the developing tassel to the base of the plant. Divide the tassel height by the plant height, and multiply by 100. This figure is the tassel ratio. If the tassel ratio is at

least 35 (preferably 40 to 45) and at least 75 percent of the plants show recent whorl feeding, then treatment is justified. Use 1 pound of actual diazinon in granular form per acre or 1 1/2 pounds of carbaryl (Sevin) as granules. For spraying, use the same amount of actual insecticide per acre, and direct the spray to the upper third of the plant. Aerial applications should be granules, not sprays or dusts. Follow the label precautions in harvesting and feeding treated corn. DDT can be used as granules or sprays, but not on or adjacent to dairy farms.

In central Illinois from 20 to 50 percent of the moths have emerged, while in northern Illinois emergence is just beginning. It does not appear that first-generation corn borer will be a problem in this area.

Grasshoppers are now hatching. Hard, beating rains kill the tiny 'hoppers, but hatch will continue for several weeks and some will survive. We do not expect any severe or widespread grasshopper infestation, but some localized infestations may still be serious. The best time to control grasshoppers is while they are small and still concentrated in their hibernating quarters along roadsides, ditch banks, fence rows, grass waterways, etc. If control becomes necessary, 3/4 pound of carbaryl (Sevin), 1/2 pound of diazinon or 1 pound of malathion per acre is effective. Toxaphene at 1 1/2 pounds per acre is also effective but should not be used on dairy farms or adjacent to dairy pastures or hay fields. Do not spray toxaphene near fish-bearing waters. Follow time intervals between application and crop harvest as listed on labels.

Bean leaf beetles may soon attack newly emerging soybeans, causing severe defoliation. If control becomes necessary, apply toxaphene or carbaryl.

House flies may soon become numerous. Plan your program now and follow these three steps: (1) Practice good sanitation; clean out fly breeding areas, such as manure, rotting straw, wet hay and feed, as often as is practical (preferably once a week). (2) Apply a barn spray material, such as dimethoate (Cygon), diazinon or ronnel (Korlan), to runoff on ceilings and walls of all livestock buildings. Also spot-spray outside around doors and windows and along fences in the lot. Use only ronnel in poultry houses. Always cover all water and feed troughs before spraying, and do not spray animals. (3) You may also want to apply a supplementary spray bait, using the same insecticides mixed with two parts corn sirup and one part water. Other insecticide baits may be used as supplements to good sanitation and barn spraying. This treatment will also control stable flies resting in and around livestock buildings.

Stored grain insects are readying themselves for the big feast of newly harvested wheat. Follow these three steps to protect wheat from damage for a year or more: (1) Sweep up and clean out all old grain and other debris from inside and around the storage bin. (2) Apply a water-base spray of 1.5 percent premium-grade malathion or 2.5 percent methoxychlor to the walls, ceiling and floor. (3) Treat the wheat with a premium-grade malathion dust or spray before placing it in the bin.

The Homeowner's Insect Problems

Sod webworm moths are emerging from larvae that survived the winter. The first-generation worms, which hatch from eggs laid by these adults, are seldom numerous enough in lawns to cause injury. It is the second-generation worms present in late July and August that build up and cause damage. It is too soon to predict sod webworm problems for 1966.

Periodical cicada, or 17-year locusts, are due to emerge in an area bounded by a line from Vermilion to Knox to Scott to Montgomery to Vermilion county. This particular brood was numerous in 1949, and the nymphs have remained in the ground, sucking the sap from tree roots. The adult cicadas prefer oak, hickory, apple, peach and pear trees and grapevines for laying eggs. Damage occurs when the females make slits in branches and twigs in which to deposit eggs. These small twigs and branches turn brown, die and sometimes break off. The young nymphs that hatch crawl into the soil for another 17 years.

Protect tender small trees and shrubs by enclosing them in cheesecloth or mosquito netting. Cicadas can be controlled by spraying with carbaryl (Sevin) about every six days while cicadas are present. Mite problems may develop with repeated spraying of carbaryl. Malathion can be used in conjunction with carbaryl to help prevent a mite buildup.

Bagworms are now hatching in central Illinois. For best control, plan to spray evergreens this weekend in the central area. The eggs will all be hatched by then, and the worms will still be small (June 18 and 19). June 30 is the target date for bagworm sprays in northern Illinois. Spraying should already be under way in southern Illinois. Carbaryl (Sevin), malathion, diazinon or lead arsenate is effective as a spray. Follow label directions, and check the plants that may be injured if sprayed with the insecticide you are using.

Iris borers - If you have a history of problems with iris borers in iris, treat now with dimethoate (Cygon), using 4 teaspoons of the 25% emulsifiable concentrate per gallon of water. Spray leaves thoroughly and exposed roots to the point of runoff.

Caution to Those Using Insecticides

Before applying insecticides, read the labels carefully and follow all precautions. This will not only insure personal safety, but will also eliminate residue hazards.

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This weekly report was prepared by H. B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman and Clarence E. White, Illinois Natural History Survey and University of Illinois College of Agriculture, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch, from information gathered by entomologists and cooperators who send in weekly reports from their own localities.

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Cooperative Extension Service, University of
Illinois College of Agriculture in Cooperation With
the Illinois Natural History Survey and U.S.D.A.

FOR IMMEDIATE RELEASE June 17, 1966

INSECT SURVEY BULLETIN NO. 9

This ninth weekly bulletin on the general insect situation in Illinois (fruit insects excepted), prepared by entomologists of the University of Illinois College of Agriculture, Illinois Natural History Survey and cooperating agencies, reports general trends in insect activity and suggests abbreviated control measures. Each individual should check his own fields to determine local conditions.

Present Farm Insect Problems

Armyworms are maturing rapidly and are changing into the pupal stage. Thus a large population of worms may "disappear" almost overnight. Furthermore, the wheat crop is mature enough to make leaf feeding no longer important.

If armyworms are eating only the leaves on wheat, ignore them. But if they start to cut heads, estimate the population and possible damage, and apply toxaphene if necessary.

Armyworms migrating from wheat can rapidly strip a cornfield. If they start to migrate into corn, apply 2 pounds of toxaphene or 1 pound of carbaryl (Sevin) per acre to stop the migration and protect the corn.

There are no restrictions on use of the grain from toxaphene-treated fields, but do not feed the forage or straw to dairy animals or to livestock fattening for slaughter. Carbaryl cannot be used on small grains after the boot stage, but it can be used on forage and ensilage crops until the day of harvest. Therefore, we suggest the use of toxaphene on wheat and carbaryl on grass pastures and hay crops. But do not apply toxaphene adjacent to fish-bearing waters. When using carbaryl, notify neighboring beekeepers.

Black cutworms continue to be a problem in some cornfields. Size varies from small to mature worms that have begun to pupate. Control is erratic, but if the stand is being threatened or low spots in a field are seriously damaged, apply 3 pounds of toxaphene per acre and direct the spray at the base of the plants. Cultivate immediately to cover the spray deposit.

On dairy farms, use 2 pounds of carbaryl (Sevin) per acre. This treatment will help to control small worms but will not kill the large ones.

Results with this insecticide will depend to some extent on soil moisture and on rain immediately after spraying. Do not expect a spectacular kill of cutworms overnight. Evaluate control three or four days after treatment.

European corn borer egg laying and hatch are nearly complete in the southern part of Illinois. The first generation will not be damaging. In the area north of a line from Harrisburg to Carbondale and south of a line from Carlinville to Mattoon, egg laying will rapidly reach a peak and hatching will be complete in about two weeks. A few early, rapidly growing fields may be damaged in this area.

To decide whether an insecticide can be profitably applied, measure the tassel ratio of the field and count the percent of plants with recent whorl leaf feeding. To determine the tassel ratio, measure the height of the plant with leaves extended; split the stalk open and measure from the tip of the developing tassel to the base of the plant. Divide the tassel height by the plant height, and multiply by 100. This figure is the tassel ratio. If the tassel ratio is at least 35 (preferably 40 to 45) and at least 75 percent of the plants show recent whorl feeding, then treatment is justified. Use 1 pound of actual diazinon in granular form per acre or 1 1/2 pounds of carbaryl (Sevin) as granules. For spraying, use the same amount of actual insecticide per acre, and direct the spray to the upper third of the plant. Aerial applications should be granules, not sprays or dusts. Follow the label precautions in harvesting and feeding treated corn.

Corn flea beetles are feeding on corn in the southern half of Illinois and are becoming progressively more numerous southwards. No economic damage was observed this week.

Stored grain insects are usually a problem in stored wheat. Before wheat harvest begins, sweep up and clean out all old grain and other debris from inside and around the bin. Then spray all inside surfaces to runoff with 1.5 percent premium-grade malathion or 2.5 percent methoxychlor. Also treat the wheat, as it is being binned, with a liquid or dust form of premium-grade malathion. These three steps will insure insect-free wheat for a year or more.

Horn flies are abundant on cattle in the southern one-third of Illinois. Apply Ciodrin sprays to dairy cows and either Ciodrin or toxaphene sprays to non-dairy cattle to control flies.

Upcoming Farm Insect Problems

Grasshoppers are hatching, but timely rains may be killing them. We did not see any population this week that might pose a problem.

Thrips are abundant in cornfields. They can be found by unrolling the whorl leaves of the plants. The black, orange or yellow, rapidly moving insects about 1/16 inch long are thrips that scar the leaf, giving it a silvery appearance. With ample moisture, this pest is not damaging. If the weather turns dry, thrips can cause damage. Use either toxaphene or carbaryl as a spray.

Armyworms of the present generation are beginning to emerge as moths in the southern one-half of Illinois. They will fly northward and deposit eggs in grassy cornfields. Observe such cornfields in the northern one-third of the state about July 5-10 for armyworms feeding on the grass and on the corn.

Corn borer moths are just beginning to lay eggs in the northern one-half of Illinois. At present, we do not anticipate a problem in the central one-third. It would be wise to check the more advanced fields in the northern section about July 1 for indications of treatment need.

The Homeowner's Insect Problems

Striped cucumber beetles are numerous on squash, cucumber, melon and other vine crops in home gardens. These black and yellow striped beetles feed upon the new seedlings as they emerge from the soil. They commonly kill the small

seedlings and seriously retard or kill older plants. Carbaryl (Sevin) used as a dust or spray will control these beetles. Apply late in the day. Repeated applications may be necessary.

Aphids are present on green beans, tomatoes and some other vegetables. These small, green, usually wingless insects suck sap from the underside of the leaves, causing them to curl downward. Aphids usually give off a sticky substance called honeydew. This substance plus cast skins can be found sticking to the leaves. Malathion is an effective spray for controlling aphids in the home garden.

Black flea beetles are present on potatoes, egg plants and tomatoes. Tiny brown pinpoint spots on the leaves are indications of feeding. These beetles jump at the slightest disturbance and may be difficult to find on the plants. Regular application of carbaryl (Sevin) sprays or dusts may be needed to obtain control. Apply late in the day.

Oystershell scale, a common pest of lilac bushes, can be controlled at this time of year with malathion. The scale insects are not encased in their shells. Also pine needle scale, a pest of many pine tree and shrub species, can be controlled at this time of year with malathion. Pine needle scale appears as white specks on the needles, and some needles turn brown and drop off.

Sod webworms are not a problem so far this year; if they are going to be, it will be August before the damage shows up. But another similar insect, which has no common name, is damaging lawns. The larva burrows into the soil and then emerges to feed on grass blades around the burrow. Damage first appears as a pencil-sized hole with damaged grass around it. These holes increase in size and turn brown as root damage occurs. No control is as yet being recommended.

Caution to Those Using Insecticides

Before applying insecticides, read the labels carefully and follow all precautions. This will not only insure personal safety, but will also eliminate residue hazards.

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This weekly report was prepared by H. B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman and Clarence E. White, Illinois Natural History Survey and University of Illinois College of Agriculture, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch, from information gathered by entomologists and cooperators who send in weekly reports from their own localities.

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Cooperative Extension Service, University of
Illinois College of Agriculture in Cooperation With
the Illinois Natural History Survey and U.S.D.A.

FOR IMMEDIATE RELEASE June 24, 1966

INSECT SURVEY BULLETIN NO. 10

This tenth weekly bulletin on the general insect situation in Illinois (fruit insects excepted), prepared by entomologists of the University of Illinois College of Agriculture, Illinois Natural History Survey and cooperating agencies, reports general trends in insect activity and suggests abbreviated control measures. Each individual should check his own fields to determine local conditions.

Present Farm Insect Problems

Armyworm populations are decreasing rapidly, and we are recommending insecticide control measures only in special instances, as it is now too late to reap maximum profit by controlling the worms. Armyworm adults are heavy-bodied brown moths that are now emerging. They are attracted to lights in large numbers.

Black cutworm moths are present and will continue to be for some time. Damage from the worms of this generation is practically over.

European corn borer is not expected to present a general problem, and only an occasional exceptionally advanced field will be damaged. In many areas, there are no exceptionally advanced fields, as most fields were planted at the same time. Thus moths will scatter small numbers of eggs in many fields instead of concentrating on a few fields, as often happens.

Moth flight and egg-laying are about complete in the south half or two-thirds of Illinois. Where needed, insecticide applications should be made before July 1.

In general, moth flight in the north one-third of the state will peak this week, and egg-laying should be declining rapidly or even be completed by July 4. We do not now anticipate much need for insecticide applications on commercial field corn. Sweet corn and early-planted fields of seed corn should be observed to determine need for treatment.

Potato leafhoppers are not so abundant this year as previously. No yellowing of second-growth alfalfa was noted this week due to their feeding.

Start your stored grain insect control program now. Sweep out the bin. Clean up grain debris outside the bin, and destroy it. Then spray the bin with premium-grade malathion or methoxychlor. As you bin the wheat, treat it with a premium-grade malathion spray or dust.

Flies are becoming more numerous on pastured cattle. Horn flies are heavy on some herds, particularly in the southern section. Stable flies are numerous, and populations will continue to increase until September. Occasional horse and deer flies are also attacking cattle.

For pastured dairy cattle, apply 1 to 2 ounces of an oil-base spray of 2 percent Ciodrin, 1.0 percent dichlorvos (DDVP) or 0.1 percent pyrethrins as needed. Water-base sprays of the same materials may be used, but control is less effective. Pay particular attention to the legs and undersides of animals when spraying.

For pastured beef cattle, apply 0.5 percent toxaphene as a water-base spray at 1 to 2 quarts per animal every three weeks. Cover the animals thoroughly with the spray. Allow 28 days to elapse between treatment with toxaphene and slaughter.

Upcoming Farm Insect Problems

Black cutworm moths are present and may be depositing eggs in low spots in cornfields where water has stood during the past few weeks. In the north one-third to one-half of Illinois, look for cutworm damage in such spots during the next few weeks. If small black cutworms should appear, apply 3 pounds of toxaphene or 2 pounds of carbaryl (Sevin) as a spray directed at the base of the plants.

Armyworm moths are extremely abundant. They may deposit eggs in grassy cornfields. Check such cornfields for worms in the north one-third of the state in two or three weeks. If it becomes necessary to control the armyworms, apply 1 pound of carbaryl per acre.

Corn leaf aphids in small numbers are in cornfields. Now present in grassy weeds, particularly foxtail, they will transfer to corn later. Many people believe that damage from these aphids is greater in grassy fields than in clean cornfields. We have no data on this point. No control is recommended now.

Corn rootworms can now be found feeding on the corn roots in an occasional cornfield. The worms are less than half grown. It is still too early to predict overall abundance and consequent damage.

The Homeowner's Insect Problems

Mosquitoes are troublesome in many areas of the state. To reduce mosquito problems, follow these steps: (1) Eliminate standing water in poorly drained eave troughs, old tires, children's toys, etc. (2) Spray shrubbery and tall grass and also walls in storm sewers with 1.5 percent malathion. To mix, use 3 ounces of 50-57 percent emulsion concentrate per gallon of water. Repeat the treatment every week or two if necessary. (3) Keep door and window screens in good repair. (4) Hang plastic resin strips (2' x 10") containing 20 percent dichlorvos (DDVP, Vapona), one strip per 1,000 cubic feet of space, or about one per room. These strips will kill mosquitoes and flies for four to six weeks. Do not use where tropical fish are present or in pet shops. A 0.1 percent pyrethrin space spray or fog applied from a pressurized can, can be used for quick knockdown in place of the dichlorvos resin strips. Repeat treatments will be needed with the spray. (5) When entering mosquito-infested areas, apply a repellent to exposed parts of the body. The best mosquito repellent to use is DEET (diethyl toluamide).

Chiggers or red bugs are annoying picnickers, campers, hikers and berry pickers. These tiny mites burrow into a skin pore and cause a red blotch. These blotches and the consequent itching may not subside for a week or more. There is little that can be done to alleviate this problem. The mites attack where clothing is tight against the skin, such as in crotch and belt-line areas.

To repel chiggers, spray or rub DEET (diethyl toluamide) where clothing fits tightly, such as the top of socks, pant cuffs, waist and neck bands. Benzyl benzoate will also protect against chiggers, but it should not be used on the skin. Take a warm, soapy shower or bath immediately upon returning from a chigger-infested area. The mites take several hours to settle down and begin to feed, and they can often be washed off before becoming embedded.

Potato flea beetles are still a problem in home gardens, as they feed on the leaves of eggplants, potatoes and tomatoes. Sprays of carbaryl (Sevin) will control them.

Caution to Those Using Insecticides

Before applying insecticides, read the labels carefully and follow all precautions. This will not only insure personal safety, but will also eliminate residue hazards.

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Cooperative Extension Service, University of
Illinois College of Agriculture in Cooperation With
the Illinois Natural History Survey and U.S.D.A.

FOR IMMEDIATE RELEASE July 1, 1966

INSECT SURVEY BULLETIN NO. 11

This eleventh weekly bulletin on the general insect situation in Illinois (fruit insects excepted), prepared by entomologists of the University of Illinois College of Agriculture, Illinois Natural History Survey and cooperating agencies, reports general trends in insect activity and suggests abbreviated control measures. Each individual should check his own fields to determine local conditions.

Present Farm Insect Problems

European corn borer moth emergence is about complete in northern Illinois. Egg laying is being spread over the more advanced fields, and in general these fields are not being seriously affected. Fields were observed in which up to 50 percent of the plants were infested, but 75 percent is used as the threshold for treatment. We do not expect much need to apply insecticide on commercial field corn for first-generation corn borer.

In the south-central and southern sections, many of the borers have already tunneled into the stalks and it is too late for effective control.

Thrips are common in the whorl leaves of corn. They are tiny (about 1/16 inch) yellow or black insects with rasping, sucking mouth parts. Their feeding appears as tiny streaks of white on leaves. Corn leaves take on a silvery appearance from heavy feeding. Plants will usually outgrow the damage, and rain helps. If plants are being seriously injured, carbaryl at 1 pound per acre will provide control.

Small numbers of newly hatched alfalfa weevil larvae can still be found feeding on alfalfa in the southern counties, but no controls are needed. We strongly suspect that these are second-generation worms.

Flies continued to increase this week. Horn fly populations are heavy on some herds, and stable flies are beginning to build up. No problems with face flies have been observed.

For pastured dairy cattle, apply 1 to 2 ounces of an oil-base spray of 2.0 percent Ciodrin, 1.0 percent dichlorvos (DDVP) or 0.1 percent pyrethrins as needed.

Ciodrin will provide effective control for two or three days, while dichlorvos and pyrethrin are effective for only a day at most. Water-base sprays of the same materials may be used, but control is less effective. Pay particular attention to the legs and undersides of animals when spraying.

For pastured beef cattle, apply 0.5 percent toxaphene as a water-base spray at 1 to 2 quarts per animal every three weeks. Cover the animals thoroughly with the spray. Allow 28 days to elapse between treatment with toxaphene and slaughter.

Upcoming Farm Insect Problems

Black cutworm moths are being taken in light traps in increasing numbers and may be depositing eggs in low spots in cornfields. Be on the lookout for cutworm damage in such spots in the northern half of Illinois during the next few weeks. If small black cutworms should appear, apply 3 pounds of toxaphene or 2 pounds of carbaryl (Sevin) as a spray directed at the base of the plants.

Corn leaf aphids can be found in the whorl of corn in the south-central and southern sections. Individual aphids--not colonies--are present in corn in the northern half of the state. Aphids can also be found in small numbers in grassy weeds like foxtail and will soon move to the corn. It is too soon to predict overall abundance and problems with this insect.

Armyworm moth flight has been heavy for two weeks. Carefully observe grassy cornfields, grass pastures and late-maturing oats in the northern one-third to one-half of the state in the next week or two. The moths may deposit eggs in these fields. If it becomes necessary to control armyworms, apply 1 pound of carbaryl per acre to corn and grasses.

Spotted alfalfa aphids are present in many fields of alfalfa, but populations are not yet alarming. Hot, dry conditions favor their development, and damage in the past has occurred from late July through August and into September. More on this insect later.

The Homeowner's Insect Problems

Ants, spiders, sowbugs, roaches and other crawling insects continue to enter homes. If you sprayed the outside foundation wall of your house in May, it will need another application now. Spray the foundation from the sill to the soil to the point of runoff with either 2 percent chlordane or 1/2 percent dieldrin. Also spray 2 or 3 inches of soil next to the foundation wall. Buy the liquid emulsion concentrate, and dilute it with water to the proper strength. Spray cracks or expansion joints along porches and around steps. In houses with crawl spaces, it is best to treat the inside of the foundation wall as well as the outside. Do not spray near wells or cisterns. Do not spray shrubbery or flowers, as the oil may burn the foliage. This treatment will control many crawling insects that migrate into the house from outside and will help to eliminate the need for sprays indoors.

Mosquitoes are troublesome in many areas of the state. To reduce mosquito problems, follow these steps: (1) Eliminate standing water in poorly drained eave troughs, old tires, children's toys, etc. (2) Spray shrubbery and tall grass and also walls in storm sewers with 1.5 percent malathion. To mix, use 3 ounces of 50-57 percent emulsion concentrate per gallon of water. Repeat the treatment every week or two if necessary. (3) Keep door and window screens in good repair. (4) Hang plastic resin strips (2' x 10") containing 20 percent dichlorvos (DDVP, Vapona), one strip per 1,000 cubic feet of space, or about one per room. These strips will kill mosquitoes and flies for four to six weeks. Do not use where tropical fish are present or in pet shops. For quick knockdown you can use a 0.1 percent pyrethrin space spray or fog, applied from a pressurized can, in place of the dichlorvos resin strips. Repeat treatments will be needed with the spray. (5) When entering mosquito-infested areas, apply a repellent to exposed parts of the body. The best mosquito repellent to use is DEET (diethyl toluamide).

Elm leaf beetles are skeletonizing the leaves of Chinese elms, and to some extent other elm species are affected. These small, dirty, yellow to black worms can be found on the undersides of leaves. If control becomes necessary, carbaryl or lead arsenate sprays are effective.

Sod webworms are common in lawns. The moths, which have been flying for several weeks, deposit their eggs in the sod. In general, fertility and moisture will enable the grass to grow away from worm feeding. The brown spots now appearing in lawns are not due to webworm feeding. In late July and August, a new generation will appear in larger numbers, but grass growing conditions will be less favorable. In central Illinois, plan to treat with carbaryl or diazinon in early August if inspection reveals tiny worms.

Tomato hornworms are attacking tomatoes in the southern half of Illinois. These large (up to 3 or 4 inches) green, white-barred worms with a slender horn projecting from the back eat the foliage ravenously. A carbaryl spray will provide effective control.

Caution to Those Using Insecticides

Before applying insecticides, read the labels carefully and follow all precautions. This will not only insure personal safety, but will also eliminate residue hazards.

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Special Note to Farm Advisers, Cooperators and Subscribers: (NOT FOR PUBLICATION)

Your help is needed. Please advise persons sending us specimens of insects or insect damage to package them properly. Specimens that are just dropped into an envelope and mailed often arrive so badly damaged that positive identification is impossible. Place insect specimens in a small vial or box, then wrap the box and place it in another relatively crush-proof box or tube.

Put plant specimens with insect damage in a sealed polyethylene bag and mail it in a sturdy box with ample packing.

Lindane vaporizers - present status. We have been getting questions again about electrical vaporizing devices using lindane as a means of controlling insects. We do not recommend them. We consider them ineffective and a possible health hazard in the home. There is no label clearance for their use in private dwellings. A dealer should not sell them to individuals for home use. They should carry the statement, "For Industrial and Commercial Use Only. Not for Home Use."

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This weekly report was prepared by H. B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman and Clarence E. White, Illinois Natural History Survey and University of Illinois College of Agriculture, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch, from information gathered by entomologists and cooperators who send in weekly reports from their own localities.

Sent by: H. B. Petty
Extension Specialist
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HBP:SM:RR:DK:CEW:gpg

Cooperative Extension Service, University of
Illinois College of Agriculture in Cooperation With
the Illinois Natural History Survey and USDA

FOR IMMEDIATE RELEASE July 8, 1966

INSECT SURVEY BULLETIN NO. 12

This twelfth weekly bulletin on the general insect situation in Illinois (fruit insects excepted), prepared by entomologists of the University of Illinois College of Agriculture, Illinois Natural History Survey, and cooperating agencies, reports general trends in insect activity and suggests abbreviated control measures. Each individual should check his own fields to determine local conditions.

Present Farm Insect Problems

Occasional reports of chinch bug nymphs in grass waterways, grain fields, and cornfields have been received from east-central Illinois. They have also been reported on corn where a grass or grain crop was plowed down before planting.

Dieldrin should not be used for chinch bugs or for any treatment for insects on field crops. The label for all uses on field crops was withdrawn January 28, 1966, with the exception of the use as a seed treatment for corn.

Carbaryl (Sevin) at 1 pound per acre is effective against chinch bugs. Direct the spray at the bottom half of the plants. If migration from small grain to corn appears likely, treat a strip two rods wide into the grain and the same distance into the corn just as migration begins. Carbaryl should not be used on unharvested grain--only on grain stubble.

Northern corn rootworm larvae can be found feeding on the roots of corn. Damage has been reported in a few fields of continuous corn where aldrin or heptachlor has been used for several years. This shows the development of resistance, as reported during the past years. Also the phosphate insecticides applied as row treatments before early May are failing to control rootworm larvae in some fields.

The worms are maturing rapidly, and there will be little to gain from applying a granular phosphate insecticide (diazinon, parathion, or phorate) at the base of plants as a lay-by treatment. A mature rootworm larva is about 1/2 inch long. If worms are still small it may pay to make this application, but do so immediately. Cultivate immediately to cover the granules in the row.

Common stalk borers are still present in the whorl leaves of occasional corn plants and stalks of oats. These striped worms are whitish brown with a distinct purple to black band around the middle of their bodies. Corn leaves show irregular holes as they unfold, and the heads of oats turn white prematurely. Damage occurs in plants along fence rows, ditch banks, and grass waterways. Injury is of little consequence, and by the time the worms are found it is too late for chemicals to be effective. Keep grass and weeds in fields under control in August and September to help reduce borers for next year.

Mites are present in some soybean fields in southern Illinois. These tiny mites feed on the undersides of the leaves, giving them a mottled appearance. In addition, they spin webs on the undersides of leaves. These mites increase during hot, dry weather. The best control is carbophenothion (Trithion) which can be used to within 7 days of harvest. It is a toxic insecticide, and should be applied only by experienced operators.

Grasshoppers are numerous in occasional hay fields and heavy along some roadsides, ditch banks, and fence rows. Most of the eggs should have hatched by now. Hot, dry weather is favorable to grasshopper development. If 'hoppers are numerous, spray immediately before they have a chance to migrate to corn or soybeans.

Carbaryl at 3/4 pound per acre as a spray is best for grasshoppers. Diazinon at 1/2 pound, malathion at 1 pound, and naled (Dibrom) at 3/4 pound per acre are also effective. When treating forage crop fields, allow 10 days between treatment and harvest with diazinon and 4 days with naled. There is no waiting period for carbaryl or malathion.

Potato leafhoppers are small wedge-shaped green insects that suck the sap from alfalfa as well as from potatoes. Damaged alfalfa is yellow to purple and stunted. The yield of damaged alfalfa may be close to that of undamaged alfalfa, but the quality is quite different. Damaged alfalfa makes stemmy, poor-quality hay.

Damage from this pest is now showing up in southern Illinois on second-cutting alfalfa. After damage is apparent, cutting is the only answer, since the damaged growth will not recuperate. The new shoots will grow normally after cutting. If leafhoppers are numerous and damage is not yet apparent, apply 1 pound of methoxychlor or carbaryl per acre. Do not harvest or pasture for one week if methoxychlor is used. There is no waiting period with carbaryl.

Alfalfa weevils have been found for the first time in 36 counties. At present, the weevil is as far north as Hancock County in western Illinois and Lake County in eastern Illinois. The northernmost counties where the weevil is present include Hancock, McDonough, Knox, Henry, Bureau, LaSalle, DeKalb, Kane, and Lake. Since the spring of 1964 when it was first found in Illinois, it has spread into 83 counties (four-fifths of the state). We expect it to spread into the remaining counties by next year. Economic damage can be expected on alfalfa in much of the southern half of Illinois in 1967.

Wasp parasites of the alfalfa weevil have been released in various areas for two years with the hope they will establish and help as a natural force to suppress alfalfa weevil populations. It is too soon to evaluate this program.

Upcoming Farm Insect Problems

Corn leaf aphids can be found in the whorl of corn. Colonies are establishing but as yet numbers are not heavy. Aphids can also be found in small numbers in grassy weeds like foxtail and will soon move to the corn. It is too soon to predict overall abundance and problems with this insect.

Corn borer moths are emerging in the southern tip of Illinois. This moth emergence will continue for at least another 2 to 3 weeks. The moths will deposit eggs for a second generation in fields in pretassel to early silk.

Pupation has begun in south-central Illinois, and emergence of moths will begin in about another two weeks.

Moth emergence for the second generation in northern Illinois will not take place until early August.

Black cutworm and true armyworm moths have been heavy in light traps the past three weeks. Thus far no problems have been observed or reported.

The Homeowner's Insect Problem

Picnic beetles or scavenger beetles are now emerging and may soon become a nuisance in many areas. The general wet conditions occurring in most areas in May should result in moderate to heavy populations of these insects. Dry conditions during May will reduce beetle numbers. These beetles are about 1/4 inch long, shiny black with four yellow spots on their back. They are attracted to the odor of food and get into food at picnics and cookouts. They swarm onto overripe or damaged fruits and vegetables in gardens. They congregate around garbage containers and on screens of doors and windows of the kitchen.

Keep vegetables and fruits picked before they become overripe and dispose of damaged produce. Sprays of malathion, diazinon, or carbaryl will help to control the beetles, but it may be necessary to repeat the applications as beetles move into the area. Check the label for application directions for each crop. For cookouts, spray the shrubbery and any nearby tall grass or weeds with one of these same insecticides several hours before eating. A space spray of pyrethrins or dichlorvos (DDVP) applied from a pressurized spray can just before eating will provide quick knockdown of the beetles.

Mimosa webworms attack the leaves of honey locust and mimosa. A small pale gray to brown, active striped caterpillar can be found in a bunch of leaflets tied together with silken threads. They skeletonize these leaflets and then form a new nest. The old nest turns brown and the leaflets die. The worms now feeding are the first generation. There will be a second and possibly even a third generation this year. Spray infested trees with malathion using 2 teaspoons of emulsion concentrate per gallon of water. This is 1 quart in 100 gallons of water.

Elm leaf beetles are skeletonizing the leaves of Chinese elms, and to some extent other elm species are affected. These small, dirty, yellow to black worms can be found on the undersides of leaves. If control becomes necessary carbaryl or lead arsenate sprays are effective.

The sticky substance found on leaves of shade trees, sidewalks, and automobiles is most likely honeydew produced by aphids. Aphids are small green, red, or black sucking insects that suck sap from plants and excrete a sticky substance called "honeydew." A sooty mold often grows on the honeydew to blacken stems and foliage. This mold does not harm the plants. Leaves and stems being fed on by aphids may wilt and become shrivelled.

For control, spray infested trees and shrubs thoroughly and with force. Use 2 teaspoons of 50-57 percent malathion emulsion concentrate per gallon of water or 1 quart per 100 gallons. Repeat the treatment as needed.

Caution to Those Using Insecticides

Before applying insecticides, read the labels carefully and follow all precautions. This will not only insure personal safety, but will also eliminate residue hazards.

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This weekly report was prepared by H. B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Clarence E. White, Illinois Natural History Survey and University of Illinois College of Agriculture, in cooperation with the USDA, Agricultural Research Service, Plant Pest Control Branch, from information gathered by entomologists and cooperators who send in weekly reports from their own localities.

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the Illinois Natural History Survey and U.S.D.A.

FOR IMMEDIATE RELEASE July 15, 1966

INSECT SURVEY BULLETIN NO. 13

This thirteenth weekly bulletin on the general insect situation in Illinois (fruit insects excepted), prepared by entomologists of the University of Illinois College of Agriculture, Illinois Natural History Survey and cooperating agencies, reports general trends in insect activity and suggests abbreviated control measures. Each individual should check his own fields to determine local conditions.

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The most frequent question this week was what effect the hot weather might have on insects. The heat has probably hurt the crops more than the bugs. However, a siege of hot weather can cause insects to do strange things. To escape the heat and sun, some species may seek shelter in places where they normally would not be. So you can expect to find a few insects "out of place." For some species the optimum conditions for survival may have been greatly exceeded, and populations may decrease to non-economic levels. But for some species the heat merely speeds up body processes, adds a few extra generations to the normal annual number and thus increases the insect problem.

There is no "yes or no" answer to how hot weather affects insects. But unfavorable growing conditions for crops tend to accentuate the damage caused by insects.

Present Farm Insect Problems

European corn borer can be found in the more mature fields of field corn throughout the state, but only an occasional field has enough first-generation borers to cause measurable damage. First-generation feeding may reduce yields in a few of these fields by 2 to 4 percent, but most yields in fields we have investigated will be cut no more than 0 to 2 percent.

Some moths have emerged as far north as a line from St. Louis to Lawrenceville. Pupation and moth emergence will progress northward until emergence begins about August 5-10 in northern Illinois.

We can anticipate three generations of corn borer in the southern 1/3 to 1/2 of the state this year, but only two generations in the remainder of the state.

It would be useless to apply insecticides now in the northern half of Illinois for control of first generation. In southern Illinois, egg laying of second generation may be starting now in fields in late whorl to early silk. Remember that the moths will migrate from field to field. When a field becomes unfavorable for egg laying, the moths search for a favorable one.

Carbaryl (Sevin) or diazinon granules can be used to control corn borer. Apply only if you find an average of one egg mass per plant when hatching has just started.

Chinch bugs can be found in small numbers on corn plants in a few border rows of an occasional cornfield. No damage is anticipated.

Grasshoppers can be found in numbers in fence rows, ditch banks, grass waterways and similar areas. An occasional hay crop field also has large numbers of small 'hoppers.

If control is necessary, use as sprays carbaryl (Sevin) at 3/4 pound per acre, diazinon at 1/2 pound, malathion at 1 pound or naled (Dibrom) at 3/4 pound per acre. When treating forage crop fields, allow 10 days between treating and harvest with diazinon and four days with naled. There is no waiting period for carbaryl or malathion.

Armyworms can be found in small numbers in occasional grassy cornfields in northern Illinois. A few can also be found in grass-legume hay fields. These worms are up to one-half inch long.

In general, the high temperatures do not favor armyworms. If a problem develops, it will be within the next week, but even then only an occasional field will be affected. If insecticides are required on corn, carbaryl (Sevin) can be used on all corn or toxaphene on grain but not on ensilage corn.

Spotted alfalfa aphids can be found commonly in alfalfa fields on the west side of the state from southern to northern Illinois. These small yellow aphids with black spots feed on the lower leaves and stems of the alfalfa plants. The plants wilt, turn yellow and die. Check alfalfa fields, particularly those on sandy or light soils.

If the infestation approaches the damaging stage, use 1/4 pound of demeton, 1 pound of diazinon, 1 1/4 pounds of malathion or 1/4 to 1/2 pound of methyl parathion. Demeton and methyl parathion should be applied only by experienced operators equipped with the proper protective clothing. Malathion can be used on hay crops with no interval between application and harvest. Diazinon requires 10 days and methyl parathion 15 days; demeton requires 21 days, and only one application per cutting is permitted.

Potato leafhopper damage to alfalfa is now becoming evident. Some fields are turning yellow. This condition has been observed as far north as Route 30 in northern Illinois. Examine alfalfa plants for leafhoppers by shaking a plant over a plate. If you find lots of tiny, green, wedge-shaped insects that run sideways but do not yet have wings, apply 1 pound of malathion or methoxychlor to control these leafhoppers. This control will help you produce quality hay. No time interval between application and harvest is required with malathion, but one week is required when using methoxychlor.

Fields in which the plants are already yellow and purple will not recover from the damage until next growth. Thus clip and remove and then spray the new growth.

Yellow grass thrips were abundant in some soybean fields this week. These thrips rasp the surface of the leaf, making silvery paths. When they are abundant, the field may take on a silvery sheen. No control is recommended now. If control becomes necessary, you can use toxaphene, malathion or several other insecticides.

Upcoming Farm Insect Problems

European corn borer may develop into a problem this year. Although the first generation was not serious, it was present generally and some borers could be found in most fields throughout the state. Thus the seed stock is present and practically all first-generation borers will pupate and provide moths for a second generation and eventually a third in southern Illinois.

Northern corn rootworm larvae, which are generally present throughout the northern half of Illinois, are maturing rapidly. Pupation varies from 25 to 75 percent, and a few beetles have already emerged. In two or three weeks beetle populations will be at the peak, and the green beetles will be feeding on fresh silks.

If fields are just beginning to pollinate and there are at least 10 beetles per ear, kernel set may be impaired. It might pay to control these beetles with an application of 1 pound of carbaryl (Sevin). However, in fields where pollination is complete, control will not be profitable. This insect is a pest only in fields where corn has been grown four or more years in succession.

Western corn rootworm adults are already present in the limited area of infestation in western Illinois.

Corn leaf aphids are still present, but numbers are low. Only a few colonies can be found on occasional plants in northern Illinois. The aphids are more numerous in southern Illinois, but no populations of importance have been seen.

The Homeowner's Insect Problem

Picnic beetles, 1/4-inch shiny black beetles with four yellow spots on their backs, are attracted to food at picnics and cookouts and to overripe or damaged fruits and vegetables in gardens. They also congregate around garbage containers and on screens of doors and windows of the kitchen.

To control this insect, pick vegetables and fruits before they become overripe and dispose of damaged produce. Sprays of malathion, diazinon or carbaryl will help to control the beetles, but you may need to repeat the applications as beetles migrate into the area. Check the label for application directions for each crop.

For cookouts, spray shrubbery and nearby tall grass or weeds with one of these same insecticides several hours before eating. A space spray of pyrethrins or dichlorvos (DDVP) applied from a pressurized sprayer just before eating will provide quick knockdown of the beetles.

Mimosa webworms are small pale gray to brown, active striped caterpillars that feed on honey locust and mimosa. There will soon be a second and possibly even a third generation this year. Spray infested trees with malathion, using 2 teaspoons of emulsion concentrate per gallon of water (this is 1 quart in 100 gallons of water).

A slug or sawfly has been feeding on hawthornes in northern Illinois. This worm eats the epidermis, and the foliage turns brown. Use carbaryl (Sevin) as a spray or dust to control this insect.

Caution to Those Using Insecticides

Before applying insecticides, read the labels carefully and follow all precautions. This will not only insure personal safety, but will also eliminate residue hazards.

Recently a city was being sprayed with malathion, a comparatively safe insecticide, to control mosquitoes. By mistake, a can of a toxic material, parathion, with a label that looked like that on the malathion can, was used accidentally. Fortunately no harm was done. But this incident does stress the need to read the label each time you use an insecticide.

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FOR IMMEDIATE RELEASE July 22, 1966

INSECT SURVEY BULLETIN NO. 14

This fourteenth weekly bulletin on the general insect situation in Illinois (fruit insects excepted), prepared by entomologists of the University of Illinois College of Agriculture, Illinois Natural History Survey and cooperating agencies, reports general trends in insect activity and suggests abbreviated control measures. Each individual should check his own fields to determine local conditions.

Present Farm Insect Problems

Emergence of European corn borer moths has reached its peak in the area south of a line from Harrisburg to Carbondale (Highway 13), and egg laying is progressing rapidly. Moths were abundant this week as far north as Highway 50 from Lawrenceville to St. Louis, and more than 80 percent of the first-generation borers had pupated. Moth emergence in this area will reach a peak this week (week of July 25) and egg laying will progress rapidly.

In central Illinois, pupation ranges from 50 to 75 percent. Some moth emergence has occurred, but the peak will not be reached for about another 10 days.

Pupation of first-generation corn borers has just begun in north-central and northern Illinois. Thus moth emergence and egg laying will not occur in this area until about August 10.

The general picture for second-generation corn borer in Illinois is not good, but neither is it devastating. In general, 1 to 2 percent of the fields of corn will have three or more mature corn borers per plant by October 1. This number indicates a loss of 1 to 2 percent in yield in these fields. However, in a few areas as many as 33 percent of the fields may have an average of three or more borers per stalk by October 1, and some individual fields may lose 5 to 10 percent in yield.

To decide whether or not to apply an insecticide, count egg masses per plant. If the average is one or more per plant, applications may be profitable. Use 1 1/2 pounds of carbaryl (Sevin) or 1 pound of diazinon per acre as granules, applied by air or ground equipment. Sprays applied by ground machines will be as effective as granules in borer control, but sprays applied by airplane will be somewhat less effective.

Northern corn rootworm adults are now present in numbers throughout the state. They are numerous in fields where corn has been grown consecutively for three or more years. Although these green beetles can be found in southern Illinois cornfields, they become more noticeably numerous as you go northward in the state. In the northern two to four tiers of counties, they are quite abundant.

These beetles feed on silks. If pollination has not occurred, kernel set can be affected. But if pollination has occurred, then large numbers of these beetles feeding on silks will do no damage. If pollination is just beginning and there are 10 or more beetles per ear, or silking has not started and there are 10 or more beetles per plant, it may be profitable to apply one pound of carbaryl (Sevin) per acre.

Corn leaf aphids have suddenly become abundant. This week we saw one field that had 40 percent of the tassels heavily infested. These aphids will disappear in most instances upon pollen shed. Occasionally, however, the aphids will persist until harvest. We do not know why this difference occurs.

Swollen light brown aphids are those that have been parasitized by wasps. Lady beetles that devour aphids may become abundant. If you notice them in great abundance, it may not be wise to apply an insecticide.

Seed producers can profitably apply 1 1/2 pounds of malathion per acre to control aphids. Diazinon can also be used. If the corn is still in the whorl stage and is male-sterile, 10 pounds of 10 percent phorate (Thimet) granules is the best control if all precautions are followed.

We can supply only limited advice to the commercial corn farmer. With the dry weather in some areas, aphids siphoning moisture from the plant may be adding to the stress put on the corn plant. If you use an insecticide, use malathion or diazinon, but do not expect to eliminate the aphids.

Armyworms are present in an occasional field of grassy corn in northern Illinois. Carbaryl (Sevin) will give adequate control where needed.

Spider mites are present in some soybean fields. They cause leaf mottling and stunting of plants. For control, hire an experienced spray applicator to apply 3/4 pound of carbophenothion (Trithion) per acre. The mite situation is spotted, as only areas of severe moisture shortage show damage.

Thrips damage can still be observed in soybeans. Severely infested fields have a silver sheen. Toxaphene, malathion and several other insecticides will control this pest.

Upcoming Farm Insect Problems

Green cloverworm moths are abundant in some soybean fields. If they lay eggs in these fields, pale green worms with white stripes will defoliate the plants. This worm "springs" or jumps by rapidly curling and uncurling its body. It has been a pest in Illinois in previous years.

Grasshoppers are still present in some numbers on roadsides and ditchbanks but should not be confused with long-horned grasshoppers or katydids, which are also abundant on roadsides.

The Homeowner's Insect Problems

Picnic beetles are attracted to food at outdoor gatherings and to overripe or damaged produce in home gardens. These beetles are 1/4 inch long with four yellow spots on their backs.

To control this insect in your garden, pick produce before it becomes overripe, and dispose of spoiled fruits and vegetables. Malathion, diazinon or carbaryl sprays will control insects when applied around garbage containers. Repeat treatments every 10 days to two weeks to control migrating beetles. You can also use these insecticides to spray shrubbery and tall grass several hours before you plan a cookout. An aerosol bomb containing pyrethrin or DDVP is also handy to control picnic beetles and other crawling or flying insects.

Bagworms are a common pest in Illinois on both evergreen and deciduous trees and shrubs. Evergreens defoliated by this insect usually die. Bags hanging from trees and shrubs during the winter produce many larvae the following season. These larvae emerge in the southern part of Illinois at the end of May, in central Illinois the first week or two in June and in northern Illinois at the end of June. Sprays applied now in the southern areas of the state will not be effective.

To control small to one-half grown bagworms, spray with 50-57 percent malathion emulsion concentrate, carbaryl or diazinon at the rate of 2 teaspoons per gallon of water, or 1 quart per 100 gallons of water. You may use 1 tablespoon of lead arsenate per gallon of water. Now is the time to spray in the north-central and northern parts of the state. Large infestations of bagworms are difficult to control, but they can be reduced by picking and burning.

Spruce spider mite. This small insect can do much damage to arborvitae, spruce and juniper by sucking the juices from these plants. When the green color of the plants gives way to gray and then brown, control must be initiated immediately before serious damage occurs. Use either Aramite 15 percent wettable powder at a rate of 2 pounds per gallon of water or dicofol (Kelthane) 18.5 percent emulsifiable concentrate at a rate of 2 teaspoons per gallon or 1 quart per 100 gallons of water. Spray foliage thoroughly, especially the undersides of the leaves.

Caution to Those Using Insecticides

Before applying insecticides, read the labels carefully and follow all precautions. This will not only insure personal safety, but will also eliminate residue hazards.

This weekly report was prepared by H. B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman and Clarence E. White, Illinois Natural History Survey and University of Illinois College of Agriculture, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch, from information gathered by entomologists and cooperators who send in weekly reports from their own localities.

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Cooperative Extension Service, University of
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FOR IMMEDIATE RELEASE July 29, 1966

INSECT SURVEY BULLETIN NO. 15

This fifteenth weekly bulletin on the general insect situation in Illinois (fruit insects excepted), prepared by entomologists of the University of Illinois College of Agriculture, Illinois Natural History Survey and cooperating agencies, reports general trends in insect activity and suggests abbreviated control measures. Each individual should check his own fields to determine local conditions.

Special Attention

Dairy farmers are asking about use of drought corn for ensilage if either of the soil insecticides, aldrin or heptachlor, were used at or prior to corn planting. Our Illinois recommendation has been for dairy farmers not to use chlorinated hydrocarbons. However, these chemicals and their breakdown products are not translocated to any extent from the soil into the corn plant or ear, and little if any contamination should occur if care is taken in cutting the stalk. Therefore, if you use corn from treated soil for ensilage, cut the corn 12 or more inches above the ground to avoid contamination from earlier splashing or excessive dust deposits.

Our recommendation for use of 1 1/2 pounds of actual malathion per acre for corn leaf aphids was in error in last week's bulletin. Label approval is for 1 pound as a spray or 1.6 pounds as a dust. With the severe aphid infestation, we intended that the spray recommendation read 1 1/4 pounds; thus 1 gallon of 5-pound content malathion emulsion would do four acres. The interval between application and harvest is 5 days, which applies mainly to sweet corn. If you use a spray of 1 1/4 pounds per acre on field corn, allow 10 days between application and harvest.

Present Farm Insect Problems

Corn leaf aphids are moderate to heavy in most corn in the northern one-half of Illinois. The highest infestations in the state occur north of Route 36. This past week they were highest from Route 36 to Route 6. This next week they will spread north of Route 6. It is apparent now that infestations occurred because moisture was critical. The presence of aphids has been readily noticeable in some fields.

Our knowledge about the survival rate of aphids is limited. Infestations usually begin when the tassel is still deep in the whorl and remain unnoticed. Numbers gradually increase for about two weeks and then suddenly "mushroom," reaching their peak just after tassel emergence but prior to pollen release. In most instances populations decline rapidly after pollen shed; winged aphids that migrate to later planted corn or other grasses suddenly appear at this time, but the damage has usually been done. However, they may persist until fall on a few plants or occasionally on many plants in a field. We cannot explain why or when this will occur. In these instances, damage will continue to worsen, some barrenness will occur, and yield loss will be noticeable.

We have seen only a few instances of parasitized aphids. They are brown and swollen. A wasp will emerge from them and lay eggs in more aphids. Some lady beetle larvae and adults, aphid lions, and syrphid fly maggots are beginning to

appear in the most heavily infested fields. These insects eat aphids. The population should reach a peak in about two weeks and thus help to bring the aphid populations under control.

If moderate to severe aphid infestations are present when the tassels first appear, control may pay. We recommend 1 1/4 pounds of malathion per acre or 1 pound of diazinon. Allow 10 days between application and harvest when applying malathion. Diazinon sprays can be applied until the day of harvest. Remember that these sprays will reduce the beneficial insect populations. Thus, if lady beetles and similar insects are present in numbers, it may not be wise to spray.

Some persons have been asked about using carbaryl (Sevin) to control aphids. Do not use it for this purpose, as it is toxic to beneficial insects and ineffective for controlling corn leaf aphids.

European corn borer moths are emerging as far north as Highway 6, and egg laying has started. Egg hatch was reported in one locality in north-central Illinois. This is about a week earlier than anticipated. General opinion is that corn borer numbers will be greater this year than last. Furthermore, the moth emergence may extend over a longer period than the first generation did. Thus we could have extensive egg laying for the next four weeks.

To decide whether to apply an insecticide to field corn, count egg masses per plant. If the average is one or more per plant, applications may be profitable. Use 1 1/2 pounds of carbaryl (Sevin) or 1 pound of diazinon per acre as granules, applied by air or ground equipment. They will be equally effective. Sprays applied by ground machines will be as effective as granules in borer control, but sprays applied by airplane will be somewhat less effective.

Sweet corn growers should be alert to the borer situation and should follow the recommended treatment schedules if egg counts warrant.

Northern corn rootworm adults are present in many fields, particularly in the northern third of Illinois. They feed on silks. If pollination has occurred, forget these beetles for this year. If a few silks are appearing and beetles average 10 or more per plant, an application of 1 pound of carbaryl per acre may be profitable. This would also help to control corn borer. If aphids are present, use diazinon to control rootworm, the aphids, and corn borer.

Alfalfa webworms are light green to gray with black spots. They are feeding extensively on soybeans in southern and western Illinois. If growing conditions return to normal, soybeans will recuperate from moderate damage. We have no "rule of thumb" measurement for determining need for control under present conditions. If defoliation appears to be important, use 1 1/2 pounds of toxaphene per acre. Do not use carbaryl in soybeans in this area, as it could accelerate the red spider mite problem.

Woolly bears are now feeding on silks in cornfields. Ordinarily they are not important unless they are extremely abundant and are interfering with pollination. This they rarely do, and even then chemical control is not required.

Armyworms, as expected, are now appearing in some cornfields in north-central and northern Illinois. If corn is being stripped, a spray of carbaryl should provide control.

Face fly populations are increasing in the northern half of the state. Dairymen should start a control program.

Homeowners' Insect Problems

Correction: Last week a typographical error occurred. The statement said "2 pounds of Aramite 15% wettable powder per gallon..." for spruce spider mite. The recommendation should have been per 100 gallons of water.

Sod webworms may be a problem in green lawns in those areas where the drought has been severe and most lawns are brown. Unfortunately, the damage may occur when lawns have been kept green by constant watering, as moths tend to concentrate their egg laying in these lawns. If irrigation is discontinued (during vacation time), growth will be retarded and webworm damage may be severe. But these lawns may not be noticeably damaged if irrigation is continued.

To control webworms, apply 2 pounds of actual carbaryl or 1 pound of diazinon per 10,000 square feet. Use this amount in at least 25 gallons of water.

Caution to Those Using Insecticides

Before applying insecticides, read the labels carefully and follow all precautions. This will not only insure personal safety, but will also eliminate residue hazards.

This weekly report was perpared by H. B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman and Clarence F. White, Illinois Natural History Survey and University of Illinois College of Agriculture, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch, from information gathered by entomologists and cooperators who send in weekly reports from their own localities.

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the Illinois Natural History Survey and U.S.D.A.

FOR IMMEDIATE RELEASE

August 5, 1966

INSECT SURVEY BULLETIN NO. 16

This sixteenth weekly bulletin on the general insect situation in Illinois (fruit insects excepted), prepared by entomologists of the University of Illinois College of Agriculture, Illinois Natural History Survey and cooperating agencies, reports general trends in insect activity and suggests abbreviated control measures. Each individual should check his own fields to determine local conditions.

Present Farm Insect Problems

Corn leaf aphids continue to cause concern in much of the northern half of Illinois. In general, populations have peaked and are now beginning to decline due to predators, parasites and disease. Lady beetles, syrphid flies, aphis lions and parasitic wasps are reducing aphid numbers. Aphids normally tend to produce winged forms and leave plants and disappear shortly after tassel emergence. It is only in occasional fields that a population will remain high.

In some fields (particularly those maturing early) the aphids have almost completely disappeared. In other fields (especially mid- to late-maturing fields) they have completely covered the upper leaves and are dropping down and coating the lower leaves and silks.

These aphids suck the sap from the corn plants, causing barren plants. Unfortunately they cause this damage while the corn is still in the whorl stage. Therefore, in most fields it is now too late to get maximum benefits from control measures.

If a field is severely infested with healthy aphids (25 percent or more of the plants coated) and few predators are present, treatment may still be profitable, especially if soil moisture is low.

For control, apply 1 1/4 pounds of malathion or 1 pound of diazinon per acre. Allow 10 days between application and harvest when applying malathion. Diazinon sprays can be applied until the day of harvest.

European corn borer moth emergence is complete in the southern section of the state and well along in the central section. In the northern section, only 15 to 30 percent of the moths have emerged. Moth flight and egg laying will continue for another week or two in the southern section and for another three or four weeks in the northern section. Second-generation moths will concentrate egg laying in the late-maturing fields, and it is these fields that will bear watching.

Infestations are expected to be greatest in an area two or three counties wide along the west side of the state from St. Louis northward and in the extreme northern tier of counties. The infestation is expected to be most severe just south of Rock Island. Populations of second-generation corn borers are expected to be low in much of the central and particularly the east-central section. A survey of the southern section showed first-generation populations to be light; we do not expect a generally heavy second-generation population.

To decide whether to apply an insecticide, count the egg masses on several plants in several locations in the field. Observe each leaf closely. If the average is one or more egg masses per plant, treatment may be profitable. Use 1 1/2 pounds of carbaryl (Sevin) or 1 pound of diazinon per acre as granules, applied by air or ground equipment. They will be equally effective. Sprays applied by ground machines will be as effective as granules against corn borer, but sprays applied by airplane will be less effective.

True armyworms are feeding on corn leaves and in some cases on the silks in some grassy cornfields. In general, the worms are about full grown or have already pupated and feeding damage should soon lessen. It is too late for control in most cases. Carbaryl at 1 pound per acre will control armyworms if needed.

Simyra henrici, the cattail caterpillar, which is orange and brown, is common in cornfields throughout the state. These insects eat the leaves of corn, but they have never been serious enough to justify control.

Two-spotted mites are still damaging soybeans. The mites appear as small black spots on the undersides of the leaves. The problem is most acute in areas where soil moisture remains low. Affected soybeans show stunting, yellowing and browning of leaves, but the infestation is usually spotty within a field. If a field is severely affected, the mites can be controlled by applying 3/4 pound of carbophenothion (Trithion) per acre. This insecticide is highly toxic and should be applied only by experienced operators. Allow 7 days to elapse between treatment and harvest.

Alfalfa webworms and some green clover worms are feeding on the leaves of soybeans. In the central section, however, most of the worms have matured and are already emerging as moths. You can see these small buff-colored moths flying from the plants as you walk the rows. The moths may continue to lay eggs in the same field or scatter them in adjacent fields of soybeans or alfalfa. In another week or two it may pay to check soybean fields again for this insect. Webworms can be readily controlled in soybeans by applying 1 1/2 pounds of toxaphene per acre. In alfalfa, use 1 pound of carbaryl per acre to control webworm and other leaf-feeding caterpillars. Carbaryl can be used on soybeans, but it may contribute to mite buildup.

Face flies and stable flies are increasing on pastured cattle. Some individual herds are averaging 10 to 20 of each of these flies per animal, and the cattle are being noticeably bothered. Horn flies are also present in moderate numbers.

For pastured dairy cattle, apply 1 or 2 ounces of an oil-base spray of 2 percent ciodrin per animal every two to three days for best results against the pasture fly complex. A 1.0 percent dichlorvos (DDVP) or 0.1 percent pyrethrin oil-base spray applied at the rate or 1 or 2 ounces per animal per day does not give as effective control as ciodrin, particularly against the face fly. Water-base sprays of the same material may be used, but control is less effective. Pay particular attention to the animal's legs and undersides when spraying.

For pastured beef cattle, head oilers or backrubbers made of cloth, burlap or canvas and saturated with 5.0 percent toxaphene in oil are partly effective in suppressing face flies. However, for stable and horn flies, a water-base spray of 0.5 percent toxaphene, applied at the rate of 1 or 2 quarts per animal every three weeks, may be needed. Allow 28 days to elapse between treatment with toxaphene and slaughter. A 2.0 percent ciodrin oil-base spray, applied at the rate of 1 or 2 ounces per animal every two to three days from an automatic sprayer, is an excellent way to control flies on pastured beef cattle if the situation permits its use.

Homeowner's Insect Problems

Fleas are causing problems to returning vacationers. The fleas develop in debris in beds or resting areas of dogs or cats. The worm stage will live and feed in such places as rugs, upholstered furniture, and dirt in beds of flowers and shrubbery. The worm stage is usually not noticed and is harmless, but adult fleas suck the blood of warm-blooded animals. Newly emerged adults are hungry and move throughout the house or yard in search of a meal. The tiny fleas can easily cover 1 or 2 feet in a single jump. For control, treat areas where fleas occur with carbaryl or malathion as a dust or spray. The dog or cat can also be safely treated with the same material.

Fall webworm caterpillars are defoliating certain shade trees and shrubs. These pale green or yellow worms with a dark stripe down their backs extend a webbing over the branches and strip the leaves inside as they grow. They skeletonize the leaves, which then curl and dry up and eventually die. Small trees and shrubs may be completely webbed over by the time the caterpillars mature. Carbaryl applied as a spray is effective. To mix, use 2 tablespoons of 50 percent wettable powder per gallon of water.

Sod webworms may be a problem in green lawns in areas where the drought has been severe and most lawns are brown. Unfortunately, the damage may occur when lawns have been kept green by constant watering, as moths tend to concentrate egg laying in these lawns. If irrigation is discontinued (during vacation time), growth will be retarded and webworm damage may be severe. But these lawns may not be noticeably damaged if irrigation is continued.

To control webworms, apply 2 pounds of actual carbaryl or 1 pound of diazinon per 10,000 square feet. Use this amount in at least 25 gallons of water.

Caution to Those Using Insecticides

Before applying insecticides, read the labels carefully and follow all precautions. This will not only insure personal safety, but will also eliminate residue hazards.

Not for Publication - Special Note to Farm Advisers

Western corn rootworms were found for the first time this week in Henry and Whiteside counties. Adult westerns were common in cornfields throughout Mercer county. More westerns than northerns were collected in our random survey in 10 fields. There has already been a marked increase in the western rootworm population, and we expect the buildup and spread to continue. There is nothing to do at this time. We will assess the situation and have suggestions in ample time for the '67 growing season.

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This weekly report was prepared by H. B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman and Clarence E. White, Illinois Natural History Survey and University of Illinois College of Agriculture, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch, from information gathered by entomologists and cooperators who send in weekly reports from their own localities.

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the Illinois Natural History Survey and U.S.D.A.

FOR IMMEDIATE RELEASE August 12, 1966

INSECT SURVEY BULLETIN NO. 17

This seventeenth weekly bulletin on the general insect situation in Illinois (fruit insects excepted), prepared by entomologists of the University of Illinois College of Agriculture, Illinois Natural History Survey and cooperating agencies, reports general trends in insect activity and suggests abbreviated control measures. Each individual should check his own fields to determine local conditions.

Present Farm Insect Problems

Corn leaf aphids are still a major concern in many areas. In the area south of Highway 6, peak activity is generally over, most of the damage has been done and populations are rapidly declining. In the area north of Route 6, populations have just reached their peak and damage will continue for another week. Corn that suffered from drought also showed the greatest damage from aphids, although populations were no greater than those in areas with sufficient moisture.

Aphids are rapidly decreasing or have completely disappeared in early-maturing fields in which all silks have dried and the kernels are developing. In fields in full silk, aphids have reached a peak and are already disappearing from some plants. However, the aphid populations, particularly in northern Illinois, may still increase in late fields that are just shooting tassel and have only a few silks showing.

Certain fields are the exception to the rule. In these fields, the aphids are not disappearing but are dropping down from the tassels and colonizing on the ears and lower leaves. Damage may continue in these fields.

Lady beetles, green syrphid fly maggots, aphid lions and parasitic wasps all feed on aphids, but they have been present only in small numbers. They are now increasing and are helping to reduce aphids in some fields. This low predator population may be the reason for the corn leaf aphid buildup, and there is a reason for these low numbers of predators. Ordinarily moderate populations of pea aphids are present in alfalfa fields in spring and early summer. This large food supply enables lady beetles and other predators to build up in large numbers. Then in midsummer, when the pea aphid populations decrease, these predators migrate in swarms to cornfields in search of food. This year the pea aphid population in alfalfa was the lowest of any year in the past decade. Without pea aphids to eat, the predators were unable to increase. They are just now beginning to find enough food to multiply.

To control aphids in heavily infested fields, apply 1 1/4 pounds of malathion or 1 pound of diazinon per acre. At this rate, allow 10 days between application and harvest when applying malathion. Diazinon sprays can be applied until the day of harvest.

Corn borer moth emergence and egg laying are progressing in northern Illinois. Moths will continue to emerge and lay eggs for at least three weeks.

Although moths will deposit eggs on all corn, they concentrate their egg laying in fields in the late whorl to early silk stage. To decide whether to apply an insecticide, count the egg masses on several plants in several locations in the

field. Observe each leaf closely. If the average is one or more egg masses per plant, treatment may be profitable. Use 1 1/2 pounds of carbaryl (Sevin) or 1 pound of diazinon per acre as granules, applied by air or ground equipment. They will be equally effective. Sprays applied by ground machines will be as effective as granules against corn borer, but sprays applied by airplane will be less effective.

Two-spotted mites are still abundant and damaging soybeans. This pest survives best in dry weather, and since it feeds on sap from the plant, the damage has been most severe in the drought areas. In fact, feeding has damaged some fields severely, even killing beans in some spots. The mites are still plentiful and are laying eggs. Thus we expect feeding and damage to continue unless we get timely rains until harvest.

If a field is severely affected, the mites can be controlled by applying 3/4 pound of carbophenothion (Trithion) per acre. This insecticide is highly toxic and should be applied only by experienced operators. Allow seven days to elapse between treatment and harvest.

Homeowner's Insect Problems

During dry years crickets and leafhoppers are abundant in wastelands and pastures. As the urge to migrate strikes them, they leave and are attracted to houselights in great numbers. They are so abundant that even the best control does not prevent all of them from entering the house. Use chlordane as a spray outdoors. Use chlordane emulsifiable concentrate and dilute it to 1 to 2 percent with water. Spray the foundation of the house to the point of runoff, and spray a two- to four-inch area of soil along the foundation. Spray behind all steps and in cracks and crevices. In addition, apply a light spray two or three times each week to the side of the house around doorways and windows. This treatment will kill the crickets and leafhoppers as well as ants, oriental roaches, spiders and other outdoor pests that migrate into the house.

Millipedes will soon be a nuisance. These long, wirelike, brown insects, which run rapidly on their many legs, migrate from nearby pastures and wastelands. They present the greatest problem in new housing developments. When these pests begin to appear, use carbaryl as a spray on the foundation of the house and into the yard for three or four feet.

Caution to Those Using Insecticides

Before applying insecticides, read the labels carefully and follow all precautions. This will not only insure personal safety, but will also eliminate residue hazards.

Not For Publication

One western corn rootworm beetle was collected at El Paso. We are continuing our survey for this pest.

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This weekly report was prepared by H. B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman and Clarence E. White, Illinois Natural History Survey and University of Illinois College of Agriculture, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch, from information gathered by entomologists and cooperators who send in weekly reports from their own localities.

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Cooperative Extension Service, University of
Illinois College of Agriculture in Cooperation With
the Illinois Natural History Survey and U.S.D.A.

FOR IMMEDIATE RELEASE August 19, 1966

INSECT SURVEY BULLETIN NO. 18

This eighteenth weekly bulletin on the general insect situation in Illinois (fruit insects excepted), prepared by entomologists of the University of Illinois College of Agriculture, Illinois Natural History Survey and cooperating agencies, reports general trends in insect activity and suggests abbreviated control measures. Each individual should check his own fields to determine local conditions.

Corn leaf aphids have disappeared from most fields south of Highway 6 except for an occasional field where, for some reason, numbers continue to hold up and the aphids are transferring to the ear and lower part of the plant. Numbers in fields north of Route 6 increased this past week but should decline this coming week.

In general aphids this year have been most damaging in cornfields that have been under various combinations of stress, such as extremely thick stands, drought and weeds. Those fields with moisture available to the plants suffered the least damage.

Undoubtedly this will go down as the worst corn leaf aphid year on record. Low populations of natural enemies, weather favorable for aphid survival, fertility practices and perhaps other factors have contributed to this build-up.

Corn rootworm beetles are increasing in abundance in cornfields, where they are concentrating on the ears. In most fields, pollination has been completed and silk feeding is not important, but the beetles are feeding on and damaging ear tips slightly. Pollination in very late fields may be affected by silk feeding. Treatment with insecticides at this time will not be profitable. Do not confuse these green beetles with the small, wingless, soft-bodied green tarnished plant bug nymphs.

Corn borer egg laying is progressing rapidly in northern Illinois. It appears that second-generation numbers will not be much greater than in previous years.

Two-spotted mites have been present on soybeans and are now present in numbers in some cornfields. Whether control would be profitable is open to question at this late date.

Many chemicals highly effective on mites are not approved for use on soybeans or corn. Carbophenothion (Trithion) can be used on beans at 3/4 pound per acre to within 7 days of harvest, 1.0 pound of methyl parathion, can be used to within 20 days of harvest and 1/2 pound of parathion to within 15 days of harvest. For corn do not use carbophenothion more than once per season nor closer than 21 days of harvest or 1/2 pound of parathion closer than 12 days of harvest. These chemicals should be applied only by experienced operators.

Grasshopper development is later than normal, and half-grown ones are still present. However, only rarely would control pay because numbers are small.

Homeowner's Insect Problems

Leafhoppers are abundant around street lights and houselights. These wedge-shaped insects may appear in swarms at night. Also, crickets are migrating from pastures and wastelands and can be found around and in houses.

Millipedes can be a problem at this time of year, especially in newly developed housing areas that were formerly wasteland or pastures. These many-legged, brown, wirelike insects migrate from waste areas to areas in and around houses. If they become a problem, use carbaryl as a spray on the foundation of the house and out into the yard for three or four feet.

Sod webworm moths can be seen flying over lawns at dusk. These buff-colored moths have been laying eggs for the past two or three weeks. If sod webworm larvae are going to be a problem, they should be causing damage now. Brown, irregularly shaped patches will appear in the lawn.

Examine the lawn carefully for larvae. The silken cases or tunnels and freshly cut pieces of grass are the easiest means of detection. During July when there was little rain, the well-watered lawns remained green and moths laid eggs in them. But since many lawns have become green again after the rains, egg laying has spread over a more general area. First-generation sod webworm numbers were much lower this year than in the three previous years.

If treatment is necessary, use 2 pounds of carbaryl or one pound of diazinon per 10,000 square feet in at least 25 gallons of water.

Caution to Those Using Insecticides

Before applying insecticides, read the labels carefully and follow all precautions. This will not only insure personal safety, but will also eliminate residue hazards.

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Cooperative Extension Service, University of
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the Illinois Natural History Survey and U.S.D.A.

FOR IMMEDIATE RELEASE August 26, 1966

INSECT SURVEY BULLETIN NO. 19

This is the nineteenth and last weekly bulletin for this year on the general insect situation in Illinois (fruit insects excepted), prepared by entomologists of the University of Illinois College of Agriculture, Illinois Natural History Survey and cooperating agencies; it reports general trends in insect activity and suggests abbreviated control measures. Each individual should check his own fields to determine local conditions.

Green cloverworms have been abundant this past week in western and northwestern Illinois soybean fields, where they have been devouring leaves. Most of the worms will mature this coming week. Defoliation of early beans may not affect yields, since the crop is now maturing rapidly; but if these worms begin to eat pods, which they rarely do, then control may be required in these fields. On the other hand, defoliation of late-maturing beans by these worms may be quite important, as pods are just setting and beginning to fill. Thus control of the worms may be warranted to prevent loss of leaves. As a rule of thumb, the minimum average population requiring control is six per linear foot of row. To determine the field average, shake the plants over the row center and count the worms in several places in the field.

Use 1 1/2 pounds of toxaphene per acre or one pound of carbaryl (Sevin) per acre to control these pests. When using toxaphene, do not apply within three weeks of grain harvest. Do not use plants or crop refuse for livestock feeds. Do not apply toxaphene to fields adjacent to fish-bearing waters. There is no time limitation on the use of carbaryl.

Alfalfa webworms and two-spotted mites can still be found in soybean fields, but populations generally decrease as the beans mature.

Grasshoppers are feeding on soybean pods in some fields. In general, numbers are low, but control with 1 1/2 pounds of toxaphene or 1 pound of carbaryl per acre can be justified in an occasional field to prevent pod damage. Follow the restrictions listed above when applying toxaphene to soybeans.

Corn borer populations may be increasing in the southern third to half of Illinois. We have no counts to prove this, but we have reports from some areas of moderate to heavy infestations by second-generation borers. It is difficult to forecast the intensity of a third generation. The cool weather this past week may have slowed the growth of the second-generation worms. They will now prepare for winter, and only a few of them will pupate to form a third generation.

Northern corn rootworm adults are still found in many cornfields. These yellowish-brown or green beetles are no longer concentrating on the silks, which have turned brown, but are flying from plant to plant. An occasional late field may show some silk feeding by these beetles. It is too late to consider treatments with insecticides, as the possible damage to pollination has already occurred.

Fall armyworms damage is evident in a few late-maturing cornfields. The dull green to brown, smooth-skinned worms feed in the whorl of the plant, causing a ragged appearance. Later they feed on the ears. In many cases the larvae have

already matured and left the plants. Before applying control measures, be sure that the worms are still present and that most of them are not more than one inch long. Carbaryl or diazinon granules should provide control of worms in the whorl. Allow 10 days between application and harvest as ensilage, stover or grain. DDT or toxaphene granules can be used if the corn is to be used only as grain.

Seed corn producers should watch for this insect as well as the corn earworm, as they both scar the kernel tips just before harvest. Corn earworm moth flights in central and northern Illinois have thus far been relatively low, indicating a light infestation. Carbaryl spray should protect the ears against attack by these two worms, but it must be applied before the worms enter the ear.

Millipedes can be a problem at this time of year, especially in houses in newly developed areas or near damp, woody areas. If these many-legged brownish, wirelike pests become a problem, apply carbaryl or diazinon as a spray to the foundation of the house for three or four feet into the yard.

Caution to Those Using Insecticides

Before applying insecticides, read the labels carefully and follow all precautions. This will not only insure personal safety, but will also eliminate residue hazards.

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This weekly report was prepared by H. B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, Stan Rachesky and Clarence E. White, Illinois Natural History Survey and University of Illinois College of Agriculture, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch, from information gathered by entomologists and cooperators who send in weekly reports from their own localities.

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INSECT SURVEY BULLETIN

College of Agriculture
University of Illinois
and Natural History Survey, Urbana, Illinois

State / County / Local Groups / U. S. Department of Agriculture Cooperating

FOR IMMEDIATE RELEASE April 14, 1967

INSECT SURVEY BULLETIN NO. 1

This series of weekly bulletins provides a general look at the insect situation (fruit insects excepted) along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions. Before applying insecticides, read the labels carefully and follow all precautions. This will not only insure personal safety, but will also prevent residue hazards.

The *alfalfa weevil* is seriously damaging alfalfa south of Highway 13. Infestations and damage vary from field to field. Some fields are already completely defoliated, while others show only limited feeding. In this area, the weevil was active throughout the winter, and pupae (resting stage, between larva and adult) were found as early as March. Many larvae are now pupating. But with overwintering adults still laying eggs, populations of larvae can be expected to remain high for several weeks yet. In one sweep of an insect net, it is not uncommon to find 40 to 70 of these larvae--light green with white stripes down their back, and a black head. A close inspection of the terminal leaf buds will usually produce from 5 to 15 small larvae (these are more yellowish but, with a black head).

It is too late to treat fields where the terminal leaves and lower leaves are almost completely destroyed. Cut the alfalfa and remove the hay, then spray with an insecticide to protect the new growth.

In the area between Highways 13 and 50, infestations are lower and feeding is not as noticeable. However, some fields in this area will need treatment this week.

In the area between Highway 50 and a line from Champaign to St. Louis, larvae can be found and feeding is noticeable. But it will be another week or more before the situation becomes critical.

Apply insecticide sprays when 50 percent or more of the terminals show very apparent feeding and live larvae are present. After this feeding level is reached, serious damage can occur in a few days. Some fields will need to be retreated before weevil problems subside. It is expected that two to three sprayings will be required to adequately protect many alfalfa stands south of Highway 50, while one to two sprayings will be needed in the area between Highway 50 and a line from Champaign to St. Louis.

Plan on applying 20 gallons of water per acre with the correct amount of insecticide, except for stubble sprays where 10-12 gallons per acre is adequate for coverage.

The following insecticides are suggested for alfalfa weevil control:

1. Methoxychlor, 1 pound, plus diazinon, 1/2 pound (Alfatox) per acre. It is effective for approximately 10 to 14 days. Do not harvest for 7 days after treatment.

2. Malathion, 1 pound per acre. It is effective for approximately 3 to 7 days. Do not apply if air temperatures are below 60° F., since failure may result. There is no waiting period between treatment and harvest.

3. Methoxychlor, 1 pound per acre. It is effective for approximately 5 to 8 days. Do not harvest for 7 days after treatment.

4. Methyl parathion, 1/2 pound per acre. *For use only by experienced applicators.* It is effective for approximately 8 to 12 days. Do not harvest for 15 days after treatment.

5. Azinphosmethyl (Guthion), 1/2 pound per acre. *For use only by experienced applicators.* It is effective for approximately 10 to 14 days. Do not apply more than once per cutting. Allow 16 days between treatment and harvest. Water temperature for the spray mix should be above 55° F.

Rain immediately following spraying will generally reduce effectiveness, and a repeat treatment may be needed. For pastures, use malathion since you can return animals immediately after spraying.

Clover leaf weevils, which can be easily confused with alfalfa weevils, are also abundant in many clover and alfalfa fields. A few severely damaged fields have been observed in the southern half of the state.

This large, pale-green worm with white stripes down its back has a tan or brown head--rather than a black head like the alfalfa weevil. They hide down around the base of the plants during the day, feeding mainly at night. A fungus disease which causes the worms to turn cream and later black when dead (usually adhere to leaves) is prevalent and killing larvae in many fields. Also many larvae in the southern third of the state are through feeding, and pupation has started. The current rapid growth of alfalfa and red clover should enable most stands to outgrow damage. However, if weevil feeding begins to get ahead of plant growth, a spray of one pound per acre of malathion is effective. Pea aphids are also controlled by malathion.

Pea aphids are common in many alfalfa and clover fields, but are not numerous enough to be of concern. Parasitized (brown ones adhering to leaves) and diseased pea aphids and aphid predators have already been observed, and these natural agents may be sufficient to control problems.

English grain aphid populations are heavy in occasional wheat fields, but no injury is apparent from their feeding. There are many aphid predators present which will help reduce aphid numbers--particularly syrphid fly maggots. Aphids are of greatest concern when populations are high at the time wheat is heading out. No control is needed unless the plants show wilting.

European corn borer survival was higher than normal this past winter. The incidence of parasitism and disease among the borers is also low, so borers are healthy. Overwintering populations are high and present a potentially serious problem in the area west of a line from Savana to Pontiac to Petersburg to Chester, Illinois. However, strong winds or beating rains when overwintering moths are emerging could still eliminate the problem.

If possible, plow cornstalks cleanly. This will eliminate over 99 percent of the overwintering borers. Thorough disking, stalk choppers, or shredders should be used on stalk fields that are not plowed. This will eliminate about 92 percent of the overwintering borers. Plant hybrids adapted to your area. If you plant early in the threatened area, plan on applying an insecticide to prevent corn borer damage. Midseason plantings of corn will have less injury from both first and second generation corn borer.

Fungus gnats are numerous in wheat fields, particularly wheat grown on soybean stubble. These small gnat-like flies are developing in wet, decaying organic matter and are not pests of the wheat plant. They also manage to crawl through window screens and become a nuisance in homes. A 0.1-percent pyrethrin space spray applied from a pressurized spray can gives quick knockdown and relief.

Spring cankerworms will be hatching soon and stripping the leaves of many deciduous trees. They particularly like American elms and apple trees, but will attack other fruit and shade trees. Sometimes these brown to dark-green to black measuring worms completely strip trees of their new spring foliage, while other trees are only partly defoliated. When full-grown, the worms drop to the ground by means of a silken thread which appears like a streamer in the wind. By this time, it is too late for control. For best results, spray the tree while the worms are still small. Either use carbaryl (Sevin) with two pounds of 50-percent wettable powder in 100 gallons of water, or lead arsenate with four pounds per 100 gallons of water.

Elm leaf beetle adults in the southern half of the state have overwintered in partitions of homes successfully. These 1/4-inch long, smoky, yellow or green beetles are usually found between the storm and inside window. They are now moving outside to lay eggs on the leaves of Chinese elm trees. It would help to leave the outer window partly open so that the beetles have ready access to the outside.

To control elm leaf beetles, brush or spray the inside window casements with either 5-percent DDT, or 0.5-percent dieldrin in oil. Once the beetles are found in the house itself, use a vacuum cleaner to pick them up or spray them with 0.1-percent pyrethrin from a pressurized spray can.

Clover mites are annoying in some homes. These mites are tiny, orange-to-black moving specks about the size of the period at the end of this sentence. They cover furniture, walls, curtains, window sills, etc. in attempting to find their way outdoors. Pick them up with a vacuum cleaner or use an 0.1-percent pyrethrin spray from a pressurized spray can for quick knockdown. Before fall, remove grass, clover, and weeds next to the foundation--leaving a strip of bare soil at least 18 inches wide. Replanting this strip to such flowers as zinnia, marigold, chrysanthemum, rose, or salvia (which do not attract clover mites) will prevent clover mite problems next year.

Aphids are presently abundant on some hawthorne trees. These insects are small, green, soft-bodied, sucking insects that congregate on developing buds and leaves. If the insects are numerous and control appears necessary, spray the foliage with malathion (2 teaspoons of 50- to 57-percent emulsion concentrate per gallon of water) or diazinon (2 teaspoons of 25-percent emulsion concentrate per gallon of water). This treatment will also control mealbugs if present.

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This weekly report was prepared by H. B. Petty, Steve Moore, Roscoe Randell, and Don Kuhlman, Illinois Natural History Survey and University of Illinois College of Agriculture, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch, from information gathered by entomologists and cooperators who send in weekly reports from their own localities.

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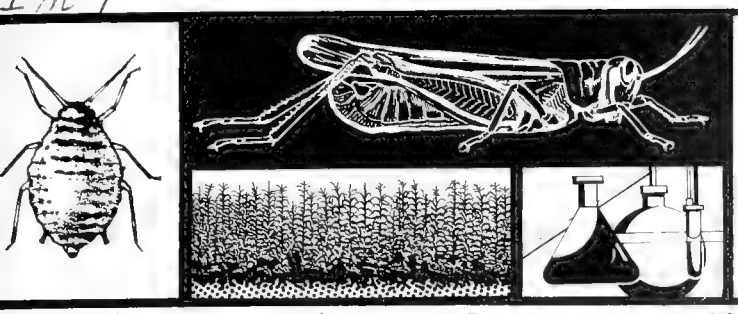

INSECT SURVEY BULLETIN

College of Agriculture
University of Illinois
and Natural History Survey, Urbana, Illinois

State / County / Local Groups / U. S. Department of Agriculture Cooperating

FOR IMMEDIATE RELEASE April 21, 1967

INSECT SURVEY BULLETIN NO. 2

This series of weekly bulletins provides a general look at the insect situation (fruit insects excepted) along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions.

Alfalfa weevil populations are high in most alfalfa fields south of Highway 40. In the area between Highway 40 and a line from Champaign to Pittsfield, larvae can be found, and feeding is noticeable in some fields. Occasional fields in this area may need treatment in the next week or two.

In the area south of Highway 40, larvae are pupating (resting stage), but eggs are still being laid so that populations of larvae remain high. The situation will probably remain critical until the middle to latter part of May. In the southern two to three tiers of counties, new spring adults are emerging in large numbers. These adults will feed for awhile on the alfalfa, move to wooded areas (often some distance away), and then remain quiet through the summer. In the fall, they will become active and deposit some eggs before hibernating for the winter.

Weevil populations and damage vary considerably from field to field, and each field should be judged on an individual basis. In some fields, the alfalfa has already been completely destroyed. It is too late to treat fields where the leaves are almost completely destroyed. Cut the alfalfa and rake off the stems, then spray with an insecticide to protect the new growth.

In general, treatments are being applied too late for maximum benefit. When 25 to 50 percent of the terminals show apparent feeding and larvae are still present, fields should be treated immediately. Serious injury can occur within a few days after this feeding level is reached. Some fields will need retreatment in two or three weeks, but by that time, it may be wiser to cut the alfalfa, remove the hay, and then treat the new growth.

It is now apparent that in the area south of Highway 13, three treatments will be needed in most fields to adequately protect the alfalfa. The second treatment is already due. In the area between Highway 13 and 40, two treatments will be needed in most fields to give satisfactory protection.

Plan on applying 20 gallons of water per acre with the correct amount of insecticide, except for stubble sprays where 10 to 12 gallons per acre is adequate for coverage. We have observed good results with aerial applications, using 4 gallons of finished spray per acre.

The following insecticides are suggested for alfalfa weevil control:

1. Methoxychlor, 1 pound; plus diazinon, 1/2 pound (Alfatox) per acre. It is effective for approximately 10 to 14 days. Do not harvest for 7 days after treatment.

2. Malathion, 1 pound per acre. It is effective for approximately 3 to 7 days. Do not apply if air temperatures are below 60° F., since failure may result. There is no waiting period between treatment and harvest.

3. Methoxychlor, 1 pound per acre. It is effective for approximately 5 to 8 days. Do not harvest for 7 days after treatment.

4. Methyl parathion, 1/2 pound per acre. FOR USE ONLY BY EXPERIENCED APPLICATORS. It is effective for approximately 8 to 12 days. Do not harvest for 15 days after treatment.

5. Azinphosmethyl (Guthion), 1/2 pound per acre. FOR USE ONLY BY EXPERIENCED APPLICATORS. It is effective for approximately 10 to 14 days. Do not apply more than once per cutting. Allow 16 days between treatment and harvest. Water temperature for the spray mix should be above 55° F.

The critical period for clover leaf weevil is over in the southern half of the state. Most of the larvae have pupated or died from a fungus disease. Only occasional larvae can be found and clover and alfalfa stands should be able to outgrow any further feeding. In the northern half of the state, observe clover and alfalfa fields (particularly new seedings with heavy trash covers) closely for the next week or two. If weevil feeding begins to get ahead of plant growth, a spray of 1 pound per acre of malathion is effective. Pea aphids are also controlled by malathion.

Pea aphids are still heavy in some alfalfa and clover fields but, in general, little injury is evident. Parasites and predators of aphids are helping to reduce numbers. Cool weather favors aphid development, while warm weather is detrimental to aphids, since natural enemies are more active. There may be an occasional field needing treatment. If plants show wilting and aphids are heavy, spray with 1 pound of actual malathion per acre.

English grain aphid populations continue high in some wheat fields. There are many aphid predators present (syrphid fly maggots, lady beetles, aphis lions), which are already reducing aphid numbers. We have observed many fields of wheat in poor conditions, but diseases (not aphids) were the cause. No control need be applied for aphids unless the plants show wilting. There will be reason for concern if aphid numbers remain high until wheat begins to head out. After wheat heads appear, it takes an average of 30 to 50 aphids per head to cause measurable damage. Ordinarily, the aphids will leave the wheat head as it enters the dough stage. If control of grain aphids becomes necessary, apply 1 pound of malathion per acre. Although you can apply malathion to within one week of harvest, that would be far too late for profitable control of grain aphids. Experienced applicators can apply 1/4 pound of parathion or demeton (Systox) per acre. Allow 15 days between treatment and harvest for parathion and 45 days for demeton.

Armyworm moths are moving northward from states to the south of us. These first moths will lay eggs in grass in fence rows, ditch banks, roadsides, and pastures

where growth is thick and rank. Soon they will concentrate their egg laying in the rank stands of wheat, barley, and rye. It is too soon to predict possible problems with armyworms.

Sawfly larvae were found in some wheat fields this week, but no armyworms were found. Sawflies are yellowish-green, velvety, transparent-appearing worms. They are abundant in wheat fields at the same time as armyworms, which are distinctly striped. Do not confuse the sawfly larvae with armyworms. No control is needed for sawflies.

Flea beetles were observed damaging small corn in the southern sections. The mild winter should have permitted good survival of flea beetles. Newly emerging corn should be watched for the presence of small, shiny, black beetles that jump readily when approached and leave white scratch marks on the leaves. For control, apply 3/4 pound of carbaryl (Sevin), or 1 1/2 pounds of toxaphene per acre, as a band over the row. Carbaryl would be the preferred material for use on dairy farms.

Corn soil insects can best be controlled by broadcasting 1 1/2 pounds of aldrin or heptachlor per acre, then disk in immediately. Do not use on dairy farms and do not expect control of resistant northern or western corn rootworms with these materials. For fields with an average infestation of soil insects and without a history of cutworm problems, row treatments with aldrin or heptachlor at 1 pound per acre have been highly satisfactory. No insecticide seed treatment is needed when aldrin or heptachlor is used as a soil treatment.

Dairy farmers or farmers having a known or suspected field of resistant rootworms should use phorate (Thimet), diazinon, 0-5353 (Buxten), disulfoton (Di-Syston), or parathion as granules in a band. In addition, when a phosphate insecticide is banded, the seed corn itself should be treated with dieldrin or heptachlor to protect against seed-infesting insects.

Black cutworm moths have also been taken in light traps for the past two weeks. Wet weather favors worm development. It is the low, wet spots in cornfields where cutworms usually strike. Also cornfields with grass problems are more likely to have cutworm problems than weed-free fields. It will be necessary to check cornfields beginning in early to mid-May for the presence of cutworms. Preplanting broadcast treatments of 1 1/2 pounds per acre of actual aldrin or heptachlor (except for dairy farms) disked in provides the most consistent control of this insect.

Forest tent caterpillars have defoliated trees in a few localities in southern Illinois this past week. The worm is hairy and pale-blue, with a row of keyhole-shaped white spots down the middle of the back, and pale-yellow stripes along the sides. They prefer poplar, but are also destructive to oaks and maple. For control, spray foliage with carbaryl (Sevin) or lead arsenate, when the feeding or worms are first noticed. Use 2 pounds of carbaryl, 50-percent wettable powder in 100 gallons of water, or 4 pounds of lead arsenate wettable powder in 100 gallons of water.

Spring cankerworms are hatching and stripping the leaves of many deciduous trees. They particularly like American elms and apply trees, but will attack other fruit and shade trees. Sometimes these brown to dark-green to black measuring worms completely strip trees of their new spring foliage, while other trees are only partly defoliated. When full-grown, the worms drop to the ground by means of a silken thread that appears like a streamer in the wind. By this time, it is too

late for control. For best results, spray the tree while the worms are still small. Either use carbaryl (Sevin) with 2 pounds of 50-percent wettable powder in 100 gallons of water, or lead arsenate with 4 pounds of wettable powder per 100 gallons of water.

Aphids are presently abundant on some hawthorne trees. These insects are small, green, soft-bodied, sucking insects that congregate on developing buds and leaves. If the insects are numerous and control appears necessary, spray the foliage with malathion (2 teaspoons of 50- to 57-percent emulsion concentrate per gallon of water) or diazinon (2 teaspoons of 25-percent emulsion concentrate per gallon of water). This treatment will also control mealbugs if present.

Bagworm eggs have overwintered successfully. Right now it is possible to pick these bags off the evergreens and other shrubs and trees. Destroy them. They are full of eggs which will begin hatching about June 1 in central Illinois. If you hand-pick now, you may not have to spray your evergreens for newly-hatching bagworms in June.

If grubs were a problem in your lawn last summer or if you wish to prevent the problem, apply chlordane at 1 1/4 pounds of actual chemical per 10,000 square feet. In established sod, apply as granules or spray on a small area. Then water-in thoroughly, before spraying another small area. For new seedings, mix in soil before planting. Do not plant vegetable root crops in treated soil for five years. This treatment should also eliminate ants and soil nesting wasps from the yard.

Ticks are already annoying campers, hikers, picnickers, fishermen, and others. Use a repellent on socks, pant cuffs, and exposed parts of the body when entering tick-infested areas (wooded and grassy areas). A material called DEET (diethyltoluamide) is one of the best tick repellents.

For control of ticks in home yards, spray grass, weeds, flowers, and low shrubbery with diazinon, malathion, or carbaryl (Sevin). Do not apply diazinon to ferns or hibiscus, or malathion to cannaert red cedar, or carbaryl to Boston ivy.

Clover mites are annoying in some homes. These mites are tiny, orange-to-black moving specks about the size of the period at the end of this sentence. They cover furniture, walls, curtains, window sills, etc. in attempting to find their way outdoors. Pick them up with a vacuum cleaner or use an 0.1-percent pyrethrin spray from a pressurized spray can for quick knockdown. Before fall, remove grass, clover, and weeds next to the foundation--leaving a strip of bare soil at least 18 inches wide. By replanting this strip with such flowers as zinnia, marigold, chrysanthemum, rose, or salvia (which do not attract clover mites) you can prevent clover-mite problems next year.

CAUTION: BEFORE APPLYING INSECTICIDES, READ THE LABELS CAREFULLY AND FOLLOW ALL PRECAUTIONS. THIS WILL NOT ONLY INSURE PERSONAL SAFETY, BUT WILL ALSO PREVENT RESIDUE HAZARDS.

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This weekly report was prepared by H. B. Petty, Steve Moore, Roscoe Randell, and Don Kuhlman, Illinois Natural History Survey and University of Illinois College of Agriculture, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch, from information gathered by entomologists and cooperators who send in weekly reports from their own localities.

INSECT SURVEY BULLETIN

College of Agriculture
University of Illinois
and Natural History Survey, Urbana, Illinois

State / County / Local Groups / U. S. Department of Agriculture Cooperating

FOR IMMEDIATE RELEASE April 28, 1967

INSECT SURVEY BULLETIN NO. 3

This series of weekly bulletins provides a general look at the insect situation (fruit insects excepted) along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions.

Forage Insects

Alfalfa weevil populations remain high and damage is severe in most alfalfa fields south of Highway 40. In the area between Highway 40 and a line from Champaign to Pittsfield, larvae can be found and feeding is noticeable in many fields. Occasional fields in this area need treatment, but all fields should be watched closely for the next few weeks. The weevil was found for the first time in Lee County this week.

The cold weather has slowed plant growth and, to a lesser extent, weevil feeding, but it did not alleviate the weevil problem. It is best to wait a day or two for warmer weather before spraying. However, if feeding damage increases markedly, treat immediately regardless of temperature.

Fields should be treated immediately when 25 to 50 percent of the terminals show apparent feeding and larvae are still present. Serious injury can occur within a few days after this feeding level is reached. As harvest time nears, it may be wiser to cut the alfalfa a few days early, remove the hay, and then treat the new growth.

Weevil populations and damage still vary considerably from field to field, and each field should be judged on an individual basis. Populations are expected to cause damage for several weeks yet.

Plan on applying 20 gallons of water per acre with the correct amount of insecticide, except for stubble sprays where 10 to 12 gallons per acre is adequate for coverage. We have observed good results with aerial applications, using 4 gallons of finished spray per acre. Rain immediately following spraying may reduce effectiveness, requiring a repeat treatment.

The following insecticides are suggested for alfalfa weevil control:

1. Methoxychlor, 1 pound, plus diazinon, 1/2 pound per acre. Such a mixture can be purchased under the trade name Alfatox. It is effective for approximately 10 to 14 days. Do not harvest for 7 days after treatment.

2. Malathion, 1 pound per acre. It is effective for approximately 3 to 7 days. Do not apply if air temperatures are below 60° F., since failure may result. There is no waiting period between treatment and harvest, which makes it an ideal choice for pasture treatment.

3. Methoxychlor, 1 pound per acre. It is effective for approximately 5 to 8 days. Do not harvest for 7 days after treatment. Results from Dr. Ed Armbrust's research plots show methoxychlor to be less effective than malathion or Alfatox.

4. Methyl parathion, 1/2 pound per acre. FOR USE ONLY BY EXPERIENCED APPLICATORS. It is effective for approximately 8 to 12 days. It is already too late to use this material on fields which are to be harvested within 15 days.

5. Azinphosmethyl (Guthion), 1/2 pound per acre. FOR USE ONLY BY EXPERIENCED APPLICATORS. It is effective for approximately 10 to 14 days. Do not apply more than once per cutting. It is already too late to use this material on fields which are to be harvested within 16 days. Water temperature for the spray mix should be above 55° F.

Carbaryl (Sevin) recently received new label registration for use against alfalfa weevil larvae. Field trials in Illinois showed carbaryl to be less effective than the insecticides now recommended.

Pea aphids are very abundant in many alfalfa and clover fields and some curling and yellowing was observed. The cool weather aids aphid development and retards plant growth. Therefore, if plants begin to show wilting, spray with 1 pound of actual malathion per acre.

Small clover leaf weevil larvae are still present in clover and alfalfa fields in western and northern sections. Feeding was noticeable, but not of concern. If weevil feeding begins to get ahead of plant growth, a spray of 1 pound per acre of malathion is effective.

Small Grain Insects

English grain aphid populations on wheat have declined and this threat appears to be over. However, plant pathologists have identified wheat streak mosaic disease in southern Illinois and yellow dwarf on wheat in central and western Illinois. Wheat streak mosaic disease is transmitted by the wheat curl mite and yellow dwarf by aphids. These insects cannot be controlled well enough to prevent spread of the disease.

A cereal leaf beetle preventive spray program is underway in two counties. Approximately 30,000 acres in Vermilion County and 40,000 acres in Will County are being treated by air with 4 fluid ounces of technical malathion (9.7 pounds per gallon) per acre. These areas were treated last July (1966), when a few specimens were found following the 1966 spring treatment. This year's treatment will provide further insurance that the beetle has been eradicated from Illinois for the present.

Corn Insects

Flea beetles were observed damaging small corn in the southern sections. The mild winter should have permitted good survival of flea beetles. Newly emerging corn should be watched for the presence of small, shiny, black beetles that jump readily

when approached and leave white scratch marks on the leaves. For control, apply 3/4 pound of carbaryl (Sevin), or 1 1/2 pounds of toxaphone per acre as a band over the row. Carbaryl would be the preferred material for use on dairy farms.

Corn soil insects can be controlled best by broadcasting 1 1/2 pounds of aldrin or heptachlor per acre, then disking in immediately. Do not use on dairy farms and do not expect control of resistant northern or western corn rootworms with these materials. For fields with an average infestation of soil insects and without a history of cutworm problems, row treatments with aldrin or heptachlor at 1 pound per acre have been highly satisfactory. No insecticide treatment of seeds is needed when aldrin or heptachlor is used as a soil treatment.

Dairy farmers or farmers having a known or suspected field of resistant rootworms should use phorate (Thimet), diazinon, 0-5353 (Buxten), disulfoton (Di-Syston), or parathion as granules in a band. In addition, when a phosphate insecticide is banded, the seed corn itself should be treated with dieldrin or heptachlor to protect against seed-infesting insects.

Seed corn maggot adults were observed this week at Champaign. Populations appeared to be higher than last year. This insect is laying its eggs in the soil (particularly soils with higher levels of organic matter) and the maggots will attack the germinating corn seeds. Row and broadcast applications of aldrin or heptachlor effectively control this insect. Also seed treatments with dieldrin, heptachlor, aldrin, or lindane are effective.

Homeowner Insect Problems

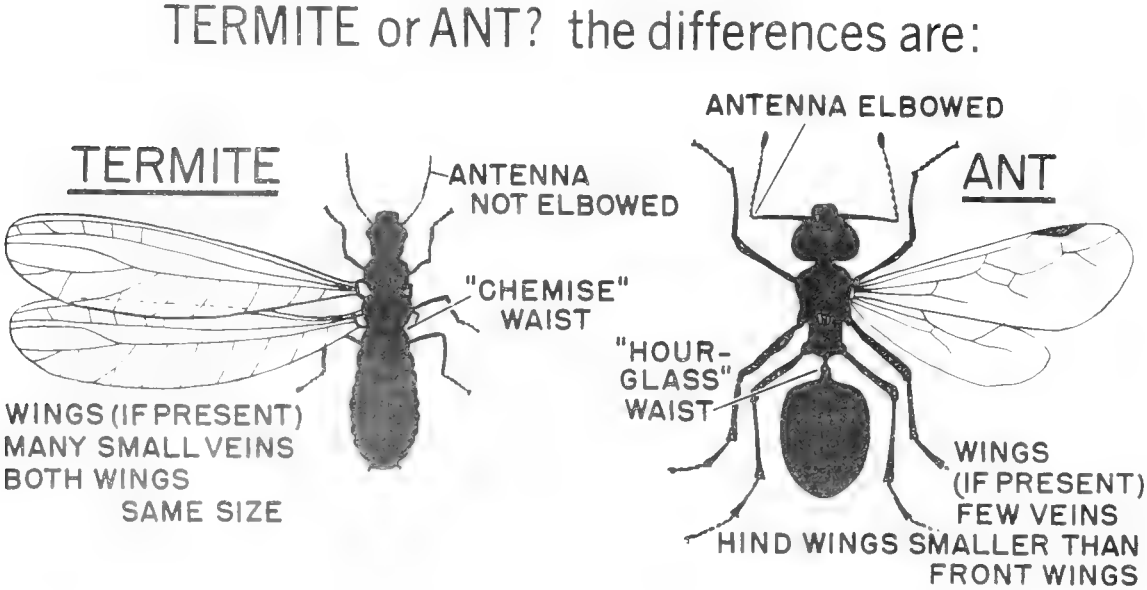
Forest tent caterpillars have defoliated trees in a few localities in southern Illinois this past week. The worm is hairy and pale-blue, with a row of keyhole-shaped white spots down the middle of the back and pale-yellow stripes along the sides. They prefer poplar, but are also destructive to oaks and maple. For control, spray the foliage with carbaryl (Sevin) or lead arsenate when the feeding and worms are first noticed. Use 2 pounds of carbaryl, 50-percent wettable powder in 100 gallons of water, or 4 pounds of lead arsenate wettable powder in 100 gallons of water.

If grubs were a problem in your lawn last summer or you wish to prevent a problem, apply chlordane at 1 1/4 pounds of actual chemical per 10,000 square feet. In established sod, apply as granules or spray on a small area, then water-in thoroughly before spraying another small area. For new seedings, mix in soil before planting. Do not plant vegetable root crops in treated soil for five years. This treatment should also eliminate ants and soil-nesting wasps from the yard.

Ticks are already annoying campers, hikers, picnickers, fishermen, and others. Use a repellent on socks, pant cuffs, and exposed parts of the body when entering tick-infested areas (wooded and grassy areas). A material called DEET (diethyltoluamide) is one of the best tick repellents.

For control of ticks in home yards, spray grass, weeds, flowers, and low shrubbery with diazinon, malathion, or carbaryl (Sevin). Do not apply diazinon to ferns or hibiscus, malathion to cannaert red cedar, or carbaryl to Boston ivy.

Winged termites and ants are appearing and causing concern to homeowners.



Clothes moths and carpet beetles are looking forward to a summer's feast on improperly cared for woolens. To protect woolens during the warmer months, follow one or more of the suggested programs:

1. Dry clean or wash woolens and place them in clean plastic storage bags or other insect-tight containers.

2. Woolens that are not dry cleaned or washed should be hung in bright sunlight for a full day and brushed thoroughly before storing. Pay particular attention to pocket interiors, cuffs, and folds when brushing.

3. If the storage area is not insect-tight, as is true of most closets, trunks, and boxes, vacuum the container thoroughly and spray all inside surfaces with either 5-percent DDT or 0.5-percent lindane, applied from a pressurized spray can.

4. Cedar-lined chests are usually insect-tight, but all fabrics need to be insect-free before storing. The cedar oil vapors destroy small larvae, but do not kill larger ones. As added insurance in cedar chests, you can spray the inside surfaces as suggested above or use a fumigant material. Either naphthalene or PDB (paradichlorobenzine) is the fumigant commonly used in moth crystals, flakes, or balls. Use at least 1 pound of crystals, flakes, or balls for every 100 cubic feet of space.

5. The clothing itself can be protected by treating in light amounts with DDT (5-percent oil spray or 10-percent dust) or liberally moistening with a fluoride-base fabric solution. Protection will last a year or more unless the clothes are washed or dry cleaned. Caution: Infants clothing should be washed or dry cleaned before use.

If you have a history of soil insect problems in your vegetable garden, apply diazinon at 1 ounce per 1,000 square feet before planting. To do this, mix 1/4 pint (4 fluid ounces) of 25-percent diazinon emulsion in enough water (usually 2 to 3 gallons) to cover 1,000 square feet and then rake into the soil.

Keep outdoor insects out of your home by spraying the outside foundation wall of your home with 2-percent chlordane. Ants, spiders, centipedes, crickets, and other insects invade homes in search of food or for shelter. You can lessen the use of insecticides in the home by controlling these insect invaders before they enter.

Buy chlordane as a liquid emulsion concentrate and dilute it with water to the proper strength (1 pint of 45-percent chlordane liquid concentrate in 3 gallons of water gives a 2-percent solution). Spray the foundation from the sill to the soil until the spray runs off. Also spray 2 to 3 inches of soil next to the foundation wall. Spray cracks or expansion joints along porches and around steps and also along the edges of sidewalks and driveways. In houses with crawl spaces, treat the inside of the foundation wall, as well as the outside, and also spray support pillars. The average house requires about 3 gallons of finished spray. Do not spray near wells or cisterns. Do not spray shrubbery or flowers, because the oil may burn the foliage. Repeat the treatment in late summer for protection in the fall.

CAUTION: BEFORE APPLYING INSECTICIDES, READ THE LABELS CAREFULLY AND FOLLOW ALL PRECAUTIONS. THIS WILL NOT ONLY INUSRE PERSONAL SAFETY, BUT WILL ALSO PREVENT RESIDUE HAZARDS.

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INSECT SURVEY BULLETIN

College of Agriculture
University of Illinois
and Natural History Survey, Urbana, Illinois

State / County / Local Groups / U. S. Department of Agriculture Cooperating

FOR IMMEDIATE RELEASE May 5, 1967

INSECT SURVEY BULLETIN NO. 4

This series of weekly bulletins provides a general look at the insect situation (fruit insects excepted), along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions.

Forage Insects

The alfalfa weevil continues to hold the spotlight. Economic damage is occurring in most alfalfa fields south of a line from Paris to Alton. North of this line, weevil feeding is noticeable, but is not of economic importance as yet.

In the area south of Highway 13, larval populations continue at the same high peak they reached a month ago. In this area, populations should begin to decline in a week or two, as egg laying slows and larvae continue to pupate. In the meantime, many fields are already overdue for their second treatment. In addition to tip feeding, larvae are also feeding on the new crown shoots.

In most of the problem-fields, it would be best to cut the alfalfa (if flower buds are showing), remove the hay, and spray the new growth of the second crop. Otherwise, fields should be treated immediately when 25 to 50 percent of the terminals show apparent feeding and larvae are still present. Malathion is the preferred material to use when treating close to harvest, since no waiting period is required. However, malathion performed poorly during the cool weather this past week.

Plan on applying 20 gallons of water per acre with the correct amount of insecticide, except for stubble sprays where 10 to 12 gallons per acre is adequate for coverage. We have observed good results with aerial applications, using 4 gallons of finished spray per acre. Rain--especially right after spraying--may reduce effectiveness, requiring a repeat treatment.

The following insecticides are suggested for alfalfa weevil control:

1. Methoxychlor, 1 pound, plus diazinon, 1/2 pound (Alfatox) per acre. Effective for approximately 10 to 14 days. Do not harvest for 7 days after treatment.

2. Malathion, 1 pound per acre. Effective for approximately 3 to 7 days. Do not apply if air temperature is below 60° F.; failure may result. There is no waiting period between treatment and harvest, making this an ideal choice for pasture treatment.

3. Methoxychlor, 1 pound per acre. Effective for approximately 5 to 8 days. Do not harvest for 7 days after treatment. Results from Dr. Ed Armbrust's research plots show methoxychlor to be less effective than malathion or Alfatox.

4. Methyl parathion, 1/2 pound per acre. FOR USE ONLY BY EXPERIENCED APPLICATORS. Effective for approximately 8 to 12 days. It is already too late to use this material on fields that are to be harvested within 15 days.

5. Azinphosmethyl (Guthion), 1/2 pound per acre. FOR USE ONLY BY EXPERIENCED APPLICATORS. Effective for approximately 10 to 14 days. Do not apply more than once per cutting. It is already too late to use this material on fields that are to be harvested within 16 days. Water temperature for the spray mix should be above 55° F.

Carbaryl (Sevin) recently received new label registration for use against alfalfa-weevil larvae. Field trials in Illinois showed carbaryl to be less effective than the insecticides now recommended.

Pea aphid populations in forages are lower than last week. Aphid predators--such as larvae and adults of lady beetles, syrphid fly maggots, and aphis lions--are becoming numerous. Wasp parasites are also killing aphids. It appears that these natural enemies will alleviate the problem in most fields.

Potato leafhoppers, a pest of alfalfa, migrate several hundred miles into the state each year from the south. The first migrant leafhoppers were found this week. They are small, green, wedge-shaped insects that skid sideways when disturbed and cause the yellowing on second and third cutting alfalfa.

Spittlebugs have been hatching in northern sections. Occasional large-froth masses with green to yellow nymphs inside are present in forages in the southern sections. No economic damage is expected from spittlebugs.

Small-Grain Insects

Small, recently hatched armyworms have been found in thick stands of wheat in southern and southwestern sections. They are not yet numerous enough to be a problem, but they may increase as more eggs are laid and hatch. It will be another week or two before the infestation can be assessed correctly. Cool weather favors this pest.

Corn Insects

Black cutworm moths have been present for several weeks, and we can expect tiny cutworms to appear in cornfields anytime from now on. Watch for cut plants in the low or poorly drained spots for the next several weeks. Applications of 3 pounds of toxaphene, 2 pounds of carbaryl (Sevin), 2 pounds of diazinon (granules are best), or 1 pound of trichlorfon (Dylox) per acre--directed as a spray at the base of the plants--will control the small worms. Worms that are one to two inches long are more difficult to control. For best results, use at least 20 gallons of water per acre, and cultivate immediately to cover the spray deposit. Follow the precautions and restrictions on the label of the insecticide you use. Let's get the cutworms early this year.

Preplanting broadcast applications of 1 1/2 pounds of actual aldrin or heptachlor (do not use on dairy farms) per acre is the best insurance against a cutworm problem. Row treatments at planting time with these same insecticides provide erratic results against cutworms.

NOT FOR PUBLICATION: SPECIAL NOTE TO FARM ADVISERS

Dyfonate (N-2790), which is suggested for control of resistant corn rootworms and cutworms in Illinois Circular 899, has not received federal label approval to date. Until label approval is granted, dyfonate should not be used for this purpose. Label approval is not expected in time for use this year.

Corn borer pupation reached 40 to 50 percent in extreme southern sections, and the first moths emerged this week. Peak egg laying will probably take place in late May and early June in this area. No pupation has been recorded in the central section as yet.

Homeowner Insect Problems

Bean leaf beetles are damaging newly emerging garden beans. These beetles are green, yellow, tan, or red insects with a distinct black band around the edge of the wing covers. They usually have black spots on their back, but not always. They feed on the undersides of the leaves, eating irregular holes. Sometimes plants are completely defoliated in just a few days. These adults will continue to feed for several weeks.

Carbaryl (Sevin), as a spray or ready-prepared dust, is effective. For sprays, use 2 tablespoons of the 50-percent wettable powder per gallon of water. Repeat treatments may be needed, if more beetles appear. Spray both the upper and lower sides of the leaves for best results. Treatments can be applied up to the day of harvest if needed.

If you have a history of soil insect problems in your vegetable garden, apply diazinon at 1 ounce per 1,000 square feet before planting. To do this, mix 1/4 pint (4 fluid ounces) of 25-percent diazinon emulsion in enough water (usually 2 to 3 gallons) to cover 1,000 square feet, then rake into the soil.

Clover mites are still troublesome in some homes. The cold weather slowed their activity and has prolonged the problem. These mites are tiny, orange-to-black moving specks about the size of the period at the end of this sentence. They are commonly found on window sills, curtains, walls, furniture, etc.--especially on the south and west sides of the building. They move actively about in search of a way outdoors. Pick them up with a vacuum cleaner, or use an 0.1-percent pyrethrum spray from a pressurized spray can for quick knockdown. Before fall, remove grass, clover, and weeds next to the foundation, leaving a strip of bare soil at least 18 inches wide. Replanting this strip with such flowers as zinnia, marigold, chrysanthemum, rose, or salvia (which do not attract clover mites) will prevent clover-mite problems next year.

Clothes moths and carpet beetles are looking forward to a summer's feast on improperly cared for woolens. To protect woolens during the warmer months, follow one or more of these suggested programs:

1. Dry-clean or wash woolens and place them in clean, plastic storage bags or other insect-tight containers.

2. Woolens that are not dry-cleaned or washed should be hung in bright sunlight for a full day and brushed thoroughly before storing. Pay particular attention to pocket interiors, cuffs, and folds when brushing.

3. If the storage area is not insect-tight (as is true of most closets, trunks, and boxes), vacuum the container thoroughly and spray all inside surfaces with either 5-percent DDT or 0.5-percent lindane, applied from a pressurized spray can.

4. Cedar-lined chests are usually insect-tight, but all fabrics need to be insect-free before storing. The cedar oil vapors destroy small larvae, but do not kill larger ones. As added insurance in cedar chests, you can spray the inside surfaces as suggested above or use a fumigant material. Either napthalene or PDB (paradichlorobenzine) is the fumigant commonly used in moth crystals, flakes, or balls. Use at least 1 pound of crystals, flakes, or balls for every 100 cubic feet of space.

5. The clothing itself can be protected by treating in light amounts with DDT (5-percent oil spray or 10-percent dust) or liberally moistening with a fluoride-base fabric solution. Protection will last a year or more, unless the clothes are washed or dry-cleaned. Caution: Infants clothing should be washed or dry-cleaned before use.

Keep outdoor insects out of your home by spraying the outside foundation wall of your home with 2-percent chlordane. Ants, spiders, centipedes, crickets, and other insects invade homes in search of food or for shelter. You can reduce the use of insecticides in the home by controlling these insect invaders before they enter.

Buy chlordane as a liquid emulsion concentrate and dilute it with water to the proper strength (1 pint of 45-percent chlordane liquid concentrate in 3 gallons of water gives a 2-percent solution). Spray the foundation from the sill to the soil until the spray runs off. Also, spray 2 to 3 inches of soil next to the foundation wall. Spray cracks or expansion joints, along porches and around steps, also along the edges of sidewalks and driveways. In houses with crawl spaces, treat the inside of the foundation wall, as well as the outside, and spray support pillars. The average house requires about 3 gallons of finished spray. Do not spray near wells or cisterns. Do not spray shrubbery or flowers, because the oil may burn the foliage. Repeat the treatment in late summer for protection in the fall.

CAUTION: BEFORE APPLYING INSECTICIDES, READ THE LABELS CAREFULLY AND FOLLOW ALL PRECAUTIONS. THIS WILL NOT ONLY INSURE PERSONAL SAFETY, BUT WILL ALSO PREVENT RESIDUE HAZARDS.

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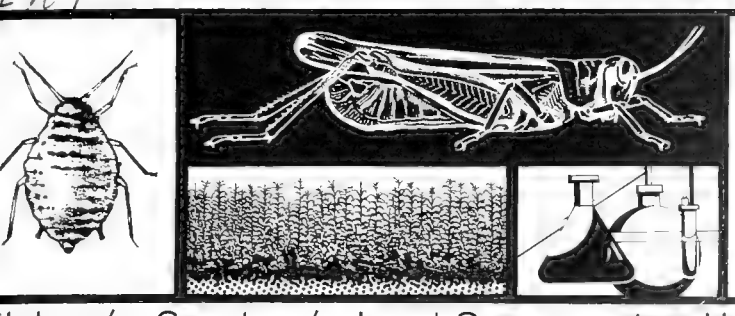
This weekly report was prepared by H. B. Petty, Steve Moore, Roscoe Randell, and Don Kuhlman, University of Illinois College of Agriculture and Illinois Natural History Survey, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch, from information gathered by entomologists and cooperators who send in weekly reports from their own localities.



INSECT SURVEY BULLETIN

College of Agriculture
University of Illinois
and Natural History Survey, Urbana, Illinois

State / County / Local Groups / U. S. Department of Agriculture Cooperating

FOR IMMEDIATE RELEASE May 12, 1967

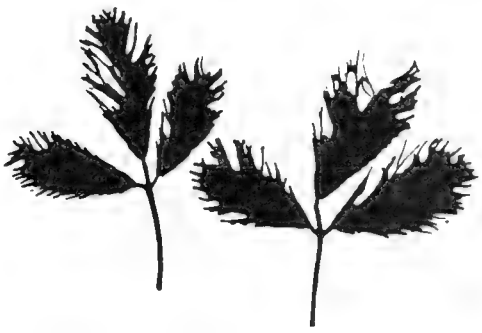
INSECT SURVEY BULLETIN NO. 5

This series of weekly bulletins provides a general look at the insect situation (fruit insects excepted), along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions.

Forage Insects

The alfalfa weevil feeding has slowed to some extent with the cool temperatures, but not enough to alleviate the problem. Economic damage is still occurring in most alfalfa fields south of a line from Paris to Alton. However, populations are still expected to be damaging for another two to four weeks in this area. It appears that the peak has been reached and populations are now beginning to decline in southern sections. North of this line (Paris to Alton), weevil feeding is noticeable, but not of economic importance.

Many larvae are now pupating; new spring adults are already abundant, particularly in southern sections. These adults will feed for awhile on the alfalfa, move to wooded areas, and then remain quiet through the summer. In the fall, they will become active and deposit some eggs before hibernating for the winter. Adult feeding damage appears as a feathering of the leaf margins (see picture), in contrast to the skeletonizing injury of the larvae. There is no satisfactory control available for adult alfalfa weevils.



Damage by adult alfalfa weevil (feathering of leaf margins)

In most of the current problem fields, it would be best to cut the alfalfa if flower buds are showing, remove the hay, and spray the new growth of the second crop. If the crop has been cut, but the new growth of the second crop not sprayed, watch it closely for evidence of weevil damage. If it does not green-up in two or three days and worms are present, treat it promptly. Other fields should be treated immediately when 25 to 50 percent of the terminals show apparent feeding and larvae are still present.

For control of alfalfa-weevil larvae, farmers making their own applications should use either malathion or a commercially prepared methoxychlor-diazinon (Alfatox) mixture. Commercial applicators can use either of the above materials or one of the more toxic insecticides like methyl parathion or azinphosmethyl (Guthion). Be sure and follow label directions for dosages, harvest limitations, and precautions when using insecticides.

Special note: Mr. C. E. White of the Illinois Natural History Survey recovered wasp and nematode (round worms) parasites from larvae and pupae (cocoons) of the alfalfa weevil. These parasites were killing the weevil, but not in sufficient numbers to provide control of the weevil as yet. This is encouraging; perhaps in another few years, these natural enemies or others yet to establish may help to alleviate problems somewhat.

Small Grain Insects

Armyworms are present in thick, rank stands of grains (wheat, barley, rye) and grasses south of Highway 40. They are still small, and only occasional fields have populations which could present problems. Along the north edge of this area, the worms were just hatched (1/16-inch) in the grain fields and about a week old in the grasses (1/4-inch to 1/2-inch). In the area south of Highway 13, the worms are generally larger, and treatments may be needed by the end of the week (May 19) in some fields.

To find armyworms, examine lodged spots or the thick, rank areas first. Shake the plants vigorously, and look on the ground for the worms. If small striped worms are present, they will probably be armyworms. Do not use this count as a field average. If you find no armyworms in these spots, no further examination is necessary. If you find lots of them, make several additional counts over the entire field. No control is needed unless the population averages six or more per linear foot. Even then, do not apply insecticides until most of the worms are over one-half inch long.

Do not confuse the striped armyworms with the transparent yellow-to-green sawflies. An armyworm has five pairs of abdominal prolegs; sawflies, six or more pairs. Sawflies do not damage wheat plants enough to require control.

Apply 1 1/2 pounds per acre of toxaphene for armyworm control in small grains. There are no restrictions on use of grain. Do not feed the straw to dairy animals or livestock fattening for slaughter. Do not contaminate fish-bearing waters with toxaphene. We have suggested that dairy farmers not use chlorinated hydrocarbons on their farms. Toxaphene belongs to this group of chemicals. However, the official label permits its use on dairy farms. If it is used on or adjacent to dairy farms, avoid drift onto pastures and hay crops. Carbaryl (Sevin), 1 pound per acre, may be applied to fields adjacent to dairy pastures, but not after the heads have begun to appear. Use carbaryl on grass pastures or hay fields if armyworms are extremely abundant. But warn area beekeepers that you are applying carbaryl. Trichlorfon (Dylox), an organic-phosphate insecticide, may be used at 3/4 pound per acre to within 21 days of harvest, but the straw should not be used for livestock feed.

The puparia or "flax seed" stage of the Hessian fly is abundant in some wheat fields in the southern sections. The wheat was stunted and the stands looked poor. The dark-brown flax seeds can be found behind the lower-leaf sheaths. Nothing can be done at this time for control. If Hessian flies are found to be numerous in a wheat field, the field should be harvested as soon as the moisture content reaches a safe level for storage. Otherwise, more of the straws weakened by prior feeding of the maggot stage will break over and make combining difficult.

Corn Insects

Flea beetles continue to feed on small corn. Newly emerging corn should be watched for the presence of small, shiny, black beetles that jump readily when disturbed and leave white scratch marks on the leaves. For control, apply 3/4 pound of

carbaryl (Sevin) or 1 1/2 pounds of toxaphene per acre as a band over the row. Carbaryl would be the preferred material for use on dairy farms.

Black cutworms have been reported damaging corn this week. The cool, wet weather is ideal for cutworm survival. Watch for cut plants in the low or poorly drained spots for the next several weeds. Applications of 3 pounds of toxaphene, 2 pounds of carbaryl (Sevin), 2 pounds of diazinon (granules are best), or 1 pound of trichlorfon (Dylox) per acre--directed as a spray at the base of the plants--will control the small worms. Worms that are one to two inches long are more difficult to control. For best results, use at least 20 gallons of water per acre and cultivate immediately to cover the spray deposit. Follow the precautions and restrictions on the label of the insecticide you use. Let's get the cutworms early this year.

Preplanting broadcast applications of 1 1/2 pounds of actual aldrin or heptachlor (do not use on dairy farms) per acre is the best insurance against a cutworm problem. Row treatments at planting time with these same insecticides provide erratic results against cutworms.

Corn borer pupation is nearly complete in the southern tip of the state this week; moth emergence has begun and will progress rapidly during the next two to three weeks. Our best guess is that peak egg laying and hatch will occur late this month or in early June. At that time, observe early, rapidly growing cornfields for borer infestations.

The area of the state expected to be most seriously affected by first-generation corn borers lies west of a line from Savana to Pontiac to Petersburg to Chester, Illinois.

Pupation of overwintering borers is just beginning in the central and western sections this week. Moth emergence should start by June 3 to 7 in this area, with peak egg laying and hatch between June 15 and 30. There are a few early-planted fields in this area that may bear the brunt of the egg laying; borer survival in these fields will be high.

Homeowner Insect Problems

Bean leaf beetles are damaging newly emerging garden beans. These beetles are green, yellow, tan, or red insects with a distinct black band around the edge of the wing covers. They usually have black spots on their back, but not always. They feed on the undersides of the leaves, eating irregular holes. Sometimes plants are completely defoliated in just a few days. These adults will continue to feed for several weeks.

Carbaryl (Sevin), as a spray or ready-prepared dust, is effective. For sprays, use 2 tablespoons of the 50-percent wettable powder per gallon of water. Repeat treatments may be needed if more beetles appear. Spray both the upper and lower sides of the leaves for best results. Treatments can be applied up to the day of harvest if needed.

European pine shoot moth larvae and pupae are in the tips of some mugho, scotch, and red pine. The infested tips are beginning to turn brown; they usually curl and will eventually die. No insecticide control is effective at this time. For small trees in home yards, break off the damaged tips and destroy them.

Are uninvited house guests having lunch in your kitchen cabinets? Many kinds of beetles and moths attack stored food products. They can be found not only in packages or containers of food, but also in the cracks and crevices of cabinets or cupboards. At the same time you do your spring housecleaning, you can give these pests their eviction notice. Follow these three simple steps:

1. Remove all food packages from the cabinets and examine a small amount from suspect packages under a bright light for signs of insects.

2. Vacuum or carefully brush out cabinets and shelving.

3. Spray the entire inside inside surface of the empty cabinets with a 5-percent DDT or methoxychlor oil solution from a pressurized spray can.

NOT FOR PUBLICATION: SPECIAL NOTE TO RADIO AND TELEVISION STATIONS

You can have University of Illinois entomologists on your station each week telling farmers how to best control their insect pests. All you do is telephone (217) 333-2614 each Friday. An automatic answering device will play a 1:40 tape summarizing the week's insect activity and forecasting next week's problems. The summary gives only the highlights. We hope you will continue to use these in-depth written reports. Contact your county farm adviser for the local angle.

Have your recorder running when you call. If you are in the northern-half of Illinois, call between 9 a.m. and 11 a.m. each Friday. If you are in the southern-half of the state, call between 11:05 a.m. and 1 p.m. each Friday.

For more information or in case of difficulty, call Mr. Cliff Scherer, Agricultural Communications Office, 330 Mumford Hall, University of Illinois, Urbana. Phone (217) 333-4783.

CAUTION: BEFORE APPLYING INSECTICIDES, READ THE LABELS CAREFULLY AND FOLLOW ALL PRECAUTIONS. THIS WILL NOT ONLY INSURE PERSONAL SAFETY, BUT WILL ALSO PREVENT RESIDUE HAZARDS.

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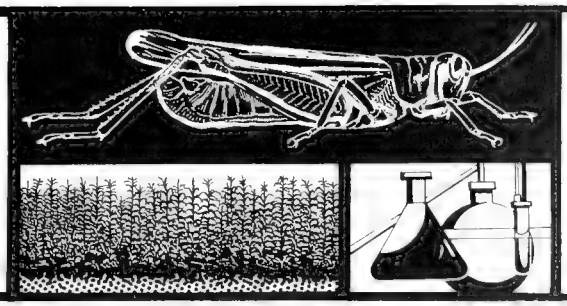

INSECT SURVEY BULLETIN

College of Agriculture
University of Illinois
and Natural History Survey, Urbana, Illinois

State / County / Local Groups / U. S. Department of Agriculture Cooperating

FOR IMMEDIATE RELEASE May 19, 1967

INSECT SURVEY BULLETIN NO. 6

This series of weekly bulletins provides a general look at the insect situation (fruit insects excepted), along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions.

Forage Insects

Alfalfa weevil populations continue high in most alfalfa fields south of a line from Paris to Alton. Populations are expected to be damaging for another two to three weeks. The prolonged period of cool weather slowed weevil development and populations did not increase greatly. With warm weather, populations could still increase before the final rapid decline occurs. North of this line (Paris to Alton), weevil feeding is noticeable, but is not of economic importance.

Many larvae are now pupating; new spring adults are already abundant in many fields. Generally, these adults will not lay eggs until fall or next spring. Adult feeding damage appears as feathering of the leaf margins, in contrast to the the skeletonizing injury of the larvae.

In most of the current problem fields, it is too late to spray the first-growth alfalfa. Cut it, remove the hay, and spray the new growth of the second crop immediately. If the crop has been cut, but the new growth of the second crop not sprayed, watch it closely for evidence of weevil damage. If it does not green-up in two or three days and worms are present, treat it promptly. Other fields should be treated immediately when 25 to 50 percent of the terminals show apparent feeding and larvae are still present. There are many second-crop fields in southern sections that need another spraying.

For control of alfalfa weevil larvae, farmers making their own applications should use either malathion or a commercially prepared methoxychlor-diazinon (Alfatox) mixture. Commercial applicators can use either of the above materials or one of the more toxic insecticides like methyl parathion or azinphosmethyl (Guthion). Be sure and follow label directions for dosages, harvest limitations, and precautions when using insecticides.

Potato leafhoppers continue their migration into the state from the south. These tiny, green, wedge-shaped insects that skid sideways when disturbed cause yellowing of second and third cutting alfalfa. No control measures are recommended at this time.

Small Grain Insects

Armyworms are present in most thick, rank stands of wheat, barley, rye, and grass in the southern half of the state. Only occasional fields have potentially damaging numbers. Some fields of thick wheat averaged as many as 4 to 6 worms per linear foot of row over the entire field, but this is still a borderline count for treatment. In lodged spots, counts were as high as 15 to 20 worms per linear foot of row. Populations of armyworms vary considerably from field to field, and each field should be judged on an individual basis. In general, armyworm development in southern sections is behind normal, while wheat development is normal or slightly ahead. This could lead to more head-cutting by the worms if the wheat begins to ripen before they mature. Also, there would be a greater likelihood of armyworm migrations from wheat to corn under these conditions.

South of Highway 50, armyworms are large enough in some fields for treatments to begin this week; to the north of this line, armyworms are still small (1/4-inch) and treatments should not be applied for another 10 days (May 29) or longer.

Damage from mice or other rodents is noticeable in wheat fields. They cut the stems in 3- or 4-inch lengths and leave them in piles. This is not the work of armyworms. They strip the leaves and beards and sometimes cut the stem just below the head.

To find armyworms, examine lodged spots or the thick, rank areas first. Shake the plants vigorously, and look on the ground for the worms. If small striped-worms are present, they will probably be armyworms. Do not use this count as a field average. If you find no armyworms in these spots, no further examination is necessary. If you find lots of them, make several additional counts over the entire field. No control is needed unless the population averages 6 or more per linear foot. Even then, do not apply insecticides until most of the worms are over one-half inch long.

Apply 1 1/2 pounds per acre of toxaphene for armyworm control in small grains. There are no restrictions on the use of the grain. Do not feed the straw to dairy animals or livestock fattening for slaughter. Do not contaminate fish-bearing waters with toxaphene.

We have suggested that dairy farmers not use chlorinated hydrocarbons on their farms. Toxaphene belongs to this group of chemicals. However, the official label permits its use on dairy farms. If it is used on or adjacent to dairy farms, avoid drift onto pastures and hay crops.

Carbaryl (Sevin), 1 pound per acre, may be applied to grain fields adjacent to dairy pastures, but not after the heads have begun to appear. Use carbaryl on grass pastures or hay fields if armyworms are extremely abundant, but warn area beekeepers that you are applying carbaryl. Trichlorfon (Dylox), an organic phosphate insecticide, at 3/4 pound per acre may be used to within 21 days of harvest, but the straw should not be used for livestock feed.

Common stalk borers (whitish-brown, striped worms with a purple band around their middle) and wheat stem maggots (pale-green maggot) feed inside the wheat stem causing the heads to turn white prematurely. Stalk borers concentrate more along field margins, whereas stem maggots are scattered throughout the field. Infestations are spotty and not of economic importance.

The cereal-leaf beetle preventive spray program was completed on May 13. This is a cooperative program involving the USDA, Plant Pest Control Division, and the Illinois Department of Agriculture. A total of 74,879 acres were treated by air with 4 fluid-ounces per acre of technical malathion (9.7 pounds per gallon); 40,883 acres were treated in Vermilion County, 5,120 acres in Kankakee County, and 28,876 acres in Will County. These areas were treated last July (1966) when a few, live cereal-leaf beetles were found following the 1966 spring treatment. The treatment just applied will provide further guarantee that the beetle has been eradicated from Illinois for the present.

Corn Insects

Black cutworms are damaging corn. Check the low spots in cornfields regularly and watch for missing plants, cut plants, or wilting plants. It may have been too wet in the usual low spots for moth-egg laying, so watch for possible damage on higher ground as well. If the stand is being threatened, apply 3 pounds of toxaphene, 2 pounds of carbaryl (Sevin), 2 pounds of diazinon (granules preferred and cover by cultivating), or 1 pound of trichlorfon (Dylox) per acre--directed as a spray at the base of the plants. For best results, use at least 20 gallons of water per acre and cultivate immediately to cover the spray deposit.

If replanting is necessary, apply and disk-in 3 pounds of aldrin or heptachlor per acre for corn. (Heavier than normal rates are needed for the larger worms.) Do not use aldrin or heptachlor if soybeans are to be planted, or on dairy farms. On dairy farms, broadcast and disk-in 2 pounds of actual diazinon per acre to control cutworms.

Flea beetles were observed damaging small corn. Newly emerging corn should be watched for the presence of small, shiny, black beetles that jump readily when disturbed and leave white scratch marks on the leaves. For control, apply 3/4 pound of carbaryl (Sevin), or 1 1/2 pounds of toxaphene per acre as a band over the row. Carbaryl would be the preferred material for use on dairy farms.

Corn borer pupation is complete and moth emergence has reached 20 to 30 percent in the extreme south. In the central section, approximately 10 percent of the borers have pupated. In northern sections, no pupation or moth emergence has occurred.

In general, borer development in the southern-half of the state is near normal, but the corn is more delayed. Therefore, low survival of first-generation borers is expected in this area. It is too soon to assess the situation for the northern-half of the state.

Soybean Insects

Bean leaf beetles were observed eating holes in the leaves of newly emerging soybeans in extreme southern sections. Damage was not severe as yet. If control becomes necessary, apply carbaryl (Sevin) or toxaphene.

Homeowner Insect Problems

Don't let fleas get a start in and around your home. Fleas develop in debris in the resting areas of dogs and cats. The worm stage (larva) of fleas will live and feed in such places as rugs, upholstered furniture, and dirt in flower and shrubbery beds. The worm stage is usually not noticed and is harmless, but adult

fleas suck the blood of warm-blooded animals. Your dog or cat constitutes a walking bait station for fleas. Dust your dog or cat at least once each month during the warm periods (May to October) with either 4-percent malathion or 5-percent carbaryl (Sevin). This will usually prevent fleas from becoming a nuisance in your home or yard--a frequent problem by late summer. Once or twice during the cooler months (November to April), dogs and cats should also be dusted with one of these same insecticides for additional protection.

Bagworms have begun to hatch in southern sections and will begin to hatch soon in the central sections. Egg hatch should be complete by June 1 in southern sections, and treatments can begin at that time. Target date for spraying in the central sections is after June 15, in northern sections after July 1. Treatments applied after the worms form 1-inch or larger sacs are less effective; often, the damage has already been done. For control, spray evergreens and other shrubs having a history of problems with carbaryl (Sevin), diazinon, lead arsenate, or malathion. Read the label and follow prescribed dosages and all precautions.

Are uninvited house guests having lunch in your kitchen cabinets? Many kinds of beetles and moths attack stored food products. They can be found not only in packages or containers of food, but also in the cracks and crevices of cabinets or cupboards. At the same time you do your spring housecleaning, give these pests their eviction notice. Follow these three simple steps:

1. Remove all food packages from the cabinets and examine a small amount from suspect packages under a bright light for signs of insects.

2. Vacuum or carefully brush-out cabinets and shelving.

3. Spray the entire inside surface of the empty cabinets with a 5-percent DDT or methoxychlor-oil solution from a pressurized spray can.

CAUTION: BEFORE APPLYING INSECTICIDES, READ THE LABELS CAREFULLY AND FOLLOW ALL PRECAUTIONS. THIS WILL NOT ONLY INSURE PERSONAL SAFETY, BUT WILL ALSO PREVENT RESIDUE HAZARDS.

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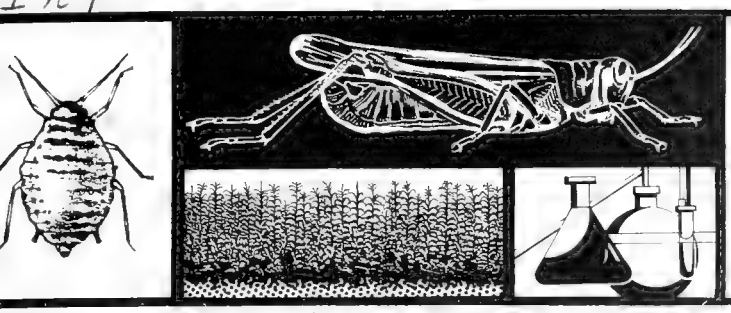

INSECT SURVEY BULLETIN

College of Agriculture
University of Illinois
and Natural History Survey, Urbana, Illinois

COOPERATIVE EXTENSION SERVICE UNIVERSITY OF ILLINOIS

tate / County / Local Groups / U. S. Department of Agriculture Cooperating

FOR IMMEDIATE RELEASE May 26, 1967

INSECT SURVEY BULLETIN NO. 7

This series of weekly bulletins provides a general look at the insect situation (fruit insects excepted), along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions.

Forage Insects

Alfalfa weevil populations are beginning to decline as larvae rapidly pupate (resting stage) and overwintering adults lay fewer eggs. Spraying of the new growth of the second crop will still be needed in some alfalfa fields south of a line from Paris to Alton. Fields never treated and fields treated only once are the most likely to have problems. Small larvae are still present, so damage is expected to continue for another two to three weeks.

Watch the new growth of the second crop closely; if it does not green up in a few days and worms are present, treat it promptly. Preliminary results from Dr. Ed Armbrust's research plots indicate that one-half the normal recommended rate of insecticide in as little as 5 gallons of water per acre is effective as a stubble treatment. Other more advanced second-crop fields should be treated in a conventional manner when 50 percent of the terminals show apparent feeding and larvae are still present.

For control of alfalfa weevil larvae, farmers making their own applications should use either malathion or a commercially prepared methoxychlor-diazinon (Alfatox) mixture. Commercial applicators can use either of the above materials or one of the more toxic insecticides, like methyl parathion or azinphosmethyl (Guthion). BE SURE AND FOLLOW LABEL DIRECTIONS FOR DOSAGES, HARVEST LIMITATIONS, AND PRECAUTIONS WHEN USING INSECTICIDES.

Lesser clover-leaf weevil larvae can be found feeding behind leaf sheaths on red clover in the southern half of the state; they will soon hatch in northern sections. The larvae are small, gray-to-dirty-green worms with a black head. They can be found in a dirty groove or tunnel in the stem behind the leaf sheaths, in the axil of the stem, or in terminal buds. Infested plants are often stunted and stems may wilt and die. Blooms may dry up and brown prematurely. No practical control measures are known at this time.

Small Grain Insects

Armyworms can be found in most thick, rank stands of grains and grasses in the southern half of the state. Infestations are heavy in some localized areas (as high as 20 to 30 per linear foot of row), but infestations are not generally heavy.

Stands in most wheat fields are not thick enough to attract and provide good survival for armyworms. In the central and south-central sections, the worms are still small (1/4-inch), and it is more difficult to assess the situation. Treatments will not be needed in this area until about May 31 or after.

Damage from mice or other rodents is noticeable in wheat fields. They cut the stems in 3- to 4-inch lengths and leave them in piles. This is not the work of armyworms. They strip the leaves and beards and sometimes cut the stem just below the head.

The find armyworms, examine lodged spots or the thick, rank areas first. Shake the plants vigorously, and look on the ground for the worms. If small striped-worms are present, they will probably be armyworms. Do not use this count as a field average. If you find no armyworms in these spots, no further examination is necessary. If you find lots of them, make several additional counts over the entire field. No control is needed unless the population averages 6 or more per linear foot. Even then, do not apply insecticides until most of the worms are over one-half inch long.

Apply 1 1/2 pounds per acre of toxaphene for armyworm control in small grains. There are no restrictions on the use of the grain. Do not feed the straw to dairy animals or livestock fattening for slaughter. Do not contaminate fish-bearing waters with toxaphene.

We have recommended against dairy farmers using chlorinated hydrocarbons on their farms. Toxaphene belongs to this group of chemicals. However, the official label permits its use on dairy farms. If it is used on or adjacent to dairy farms, avoid drift onto pastures and hay crops.

Carbaryl (Sevin), 1 pound per acre, may be applied to grain fields adjacent to dairy pastures, but not after the heads have begun to appear. Use carbaryl on grass pastures or hay fields if armyworms are extremely abundant, but warn area beekeepers that you are applying carbaryl. Trichlorfon (Dylox), an organic phosphate insecticide, at 3/4 pound per acre, may be used to within 21 days of harvest, but the straw should not be used for livestock feed.

Corn Insects

Flea beetles are numerous in many cornfields and more widespread damage was observed this week. Small corn should be watched for the presence of small, shiny, black beetles that jump readily when disturbed. They strip the green from the surface of the leaves, leaving white stripes.

These beetles may transmit a bacterial-wilt disease (Stewart's disease) to corn which can reduce yields. Disease symptoms do not usually show on field corn until late summer.

Damage is most severe on corn under 10 inches high. If damage is severe and plants are being killed, apply 3/4 pound of carbaryl (Sevin), or 1 1/2 pound of toxaphene per acre as a band spray over the row.

Only scattered reports have been received of black cutworms damaging corn. Check cornfields regularly; watch for missing plants, cut plants, or wilting plants. If the stand is being threatened, apply 3 pounds of toxaphene, 2 pounds of carbaryl (Sevin), 2 pounds of diazinon (granules preferred and cover by cultivating), or

or 1 pound of trichlorfon (Dylox) per acre--directed as a spray at the base of the plants. For best results, use at least 20 gallons of water per acre, and cultivate immediately to cover the spray deposit.

If replanting is necessary, apply and disk-in 3 pounds of aldrin or heptachlor per acre (heavier than normal rates are needed for the larger worms) for corn. Do not use aldrin or heptachlor if soybeans are to be planted, or on dairy farms. On dairy farms, broadcast and disk-in 2 pounds of actual diazinon per acre to control cutworms.

Corn borer moth emergence has reached 30 to 60 percent and egg laying has started in southern sections. In the central section, approximately 30 to 80 percent of the borers have pupated and first-emergence occurred this week. In northern sections, pupation is just beginning.

In general, first-generation corn borers are not expected to be a problem in the southern third of the state. Corn borer development is slightly ahead of normal and corn is delayed; this will result in low survival of the borers. In the area west of a line from Savana, to Pontiac, to Petersburg, to Edwardsville (where high overwintering populations exist), borer development is delayed to about the same extent as corn. This could still result in good survival of first-generation corn borers on the early planted corn. Be prepared to examine these fields in late June and early July for borer feeding. Strong winds or beating rains during the time of peak moth flight could still reduce the corn borer threat in this area.

Soybean Insects

Bean leaf beetles continue to feed on the leaves of newly emerging soybeans in southern sections; damage is not yet severe. If control becomes necessary, apply 1 pound of carbaryl (Sevin) or 1 1/2 pounds of toxaphene per acre.

Homeowner Insect Problems

In southern sections, bagworm hatch will be complete by the end of this week (June 3). Spraying is effective after this time.

In central sections, the target date for spraying is after June 15; in northern sections, after June 30. Make plans to apply treatments early this year, while the worms are small and easy to kill and before damage is evident. Carbaryl (Sevin), malathion, diazinon, or lead arsenate is effective. Follow label directions and check the plants that may be injured if sprayed with the insecticide you are using.

Aphids are now abundant on some flowers and shrubs. Aphids suck the sap from the plants causing leaves to curl, turn yellow, and eventually brown if severe. They secrete a sticky substance called "honey dew" and deposit it on leaves. Apply malathion or diazinon thoroughly and with force as a

spray to the foliage. Use 2 teaspoons of 50-to-57 percent malathion or 25-percent diazinon per gallon of water. Do not use malathion on African violets or cannaert red cedar. Do not use diazinon on ferns or hibiscus. Repeat treatments may be needed.

Oystershell scale hatch is about complete in the central and southern sections, and the new crawlers are getting ready to set up housekeeping on shrubs like lilac, dogwood, etc. In the northern sections, it will be another two weeks (June 15 before hatch is complete. They can be controlled by a careful and thorough spraying with malathion (2 teaspoons of 50-to-57 percent concentrate per gallon of water). An additional treatment will likely be needed in mid-August for second-generation crawlers. Even though scales are killed by spraying, the scale covering will persist for several months.

Spruce spider mites are attacking evergreens. Injured evergreens show pale patches, even some killing of branches. Silken threads or webbing are usually present. To detect mites, hold a sheet of white paper under a branch and strike sharply. If mites are present, you will be able to see them moving about on the paper. To control spider mites, spray with dicofol (Kelthane) at the rate of 2 teaspoons of 18.5-percent emulsion concentrate per gallon of water, or aramite at the rate of 1 teaspoon of 15-percent wettable powder per gallon of water. Malathion is also partially effective against spider mites.

Chiggers may be a problem soon. They annoy campers, picnickers, hikers, fishermen, berry pickers, and even homeowners in their own yard on occasion.

When entering possible chigger-infested areas, use a repellent such as DEET (diethyltoluamide). Take a warm, soapy shower or bath immediately after returning from a chigger-infested area. It takes the mites several hours to penetrate into the skin; they can often be washed off before becoming embedded.

To reduce chigger infestations in a home yard, spray lightly over grass, low flowers, and shrubs with either malathion or diazinon.

Don't let fleas get a start in and around your home. Fleas develop in debris in the resting areas of dogs and cats. The worm stage (larva) of fleas will live and feed in such places as rugs, upholstered furniture, and dirt in flower and shrubbery beds. The worm stage is usually not noticed and is harmless, but adult fleas suck the blood of warm-blooded animals. Your dog or cat constitutes a walking bait station for fleas. Dust your dog or cat at least once each month during the warm periods (May to October) with either 4-percent malathion or 5-percent carbaryl (Sevin). This will usually prevent fleas from becoming a nuisance in your home or yard--a frequent problem by late summer. Once or twice during the cooler months (November to April), dogs and cats should also be dusted with one of these same insecticides for additional protection.

Caution to Homeowners Using Lindane Vaporizers

These electrical vaporizing units containing pelleted or crystalline lindane are being used as a means of controlling certain insects in homes and commercial establishments. There are two types of vaporizers that have federal label clearance.

1. One is a continuously operated type for use in industrial or commercial buildings only, not for home use. Prominent warnings against home use are required.

Homeowners are purchasing and using these units. This unit is designed to uniformly vaporize lindane at the prescribed rate of 1 gram per 15,000 cubic feet of space per day, with a tolerance of 25 percent. Certain flying insects like flies (if not resistant to lindane) and mosquitoes are killed, but such devices have little value against roaches, carpet beetles, and other crawling insects.

2. The other type of vaporizer is one designed to vaporize a fixed amount of lindane within a short period of time. This "one-shot" vaporizer can be used in the home, providing certain restrictions are followed. The room to be fumigated should be tightly closed; all food, persons, pets, fish, and birds should be removed before and during the treatment period. The room should be thoroughly aired before reoccupancy. The total dosage should be vaporized in 1/2 to 4 hours and should not exceed 2 grams per 1,500 cubic feet of space. The primary value of this treatment is for killing nonresistant flies, mosquitoes, and other small flying insects. They also have some value in killing roaches, ants, silverfish, and spiders that are present and exposed at the time of application.

We do not recommend the use of these devices. We consider them a possible health hazard and generally ineffective. There are other safer, more effective means of controlling insects in homes and commercial establishments. (See University of Illinois Circular 900 "Insect Control by the Homeowner.")

CAUTION: BEFORE APPLYING INSECTICIDES, READ THE LABELS CAREFULLY AND FOLLOW ALL PRECAUTIONS. THIS WILL NOT ONLY INSURE PERSONAL SAFETY, BUT WILL ALSO PREVENT RESIDUE HAZARDS.

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This weekly report was prepared by H. B. Petty, Steve Moore, Roscoe Randell, and Don Kuhlman, University of Illinois College of Agriculture and Illinois Natural History Survey, in cooperation with USDA Agricultural Research Service, Plant Pest Control Branch, from information gathered by entomologists and cooperators who send in weekly reports from their own localities.

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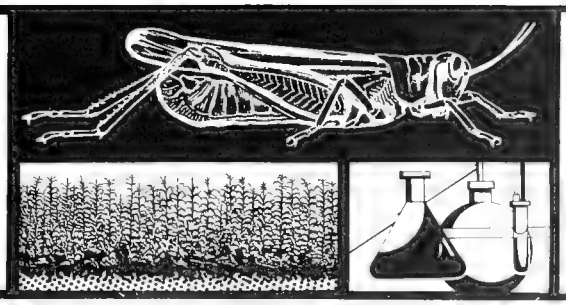

INSECT SURVEY BULLETIN

College of Agriculture
University of Illinois
and Natural History Survey, Urbana, Illinois

COOPERATIVE EXTENSION SERVICE UNIVERSITY OF ILLINOIS

tate / County / Local Groups / U. S. Department of Agriculture Cooperating

FOR IMMEDIATE RELEASE June 2, 1967

INSECT SURVEY BULLETIN NO. 8

This series of weekly bulletins provides a general look at the insect situation (fruit insects excepted), along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions.

Small Grain Insects

Armyworms hold the spotlight this week. They can be found in most thick, rank stands of grains and grasses. Infestations are heavy in some localized areas, but they are not generally severe. As wheat begins to ripen, watch for head cutting or migration of the worms into corn. Adjacent cornfields can disappear overnight under the onslaught of a hungry horde of armyworms. Severe head cutting and migrations into corn are occurring in some areas. In the area south of Highway 50, the worms are maturing rapidly and the time for treatment will be past by the end of this week (June 9).

Do not panic and spray unnecessarily for armyworms. Do not make applications until most of the worms are over 1/2-inch long. An armyworm eats 80 percent of its food supply in the last 4 or 5 days of the worm stage. Predators, parasites, and diseases also take their toll of small armyworms and can lessen the threat in a few days. Parasites have already been killing some worms. No control is needed unless the population averages 6 or more per linear foot.

Apply 1/2 pounds per acre of toxaphene for armyworm control in small grains. At the first sign of migration, treat a strip 1 to 2 rods wide in the wheat and a strip in the cornfield, using 2 pounds of toxaphene per acre. There are no restrictions on the use of the grain. Do not feed the straw or corn forage to dairy animals or livestock fattening for slaughter. Do not contaminate fish-bearing waters with toxaphene.

We have suggested that dairy farmers not use chlorinated hydrocarbons on their farms. Toxaphene belongs to this group of chemicals. However, the official label permits its use on dairy farms. If it is used on or adjacent to dairy farms, avoid drift onto pastures and hay crops.

Carbaryl (Sevin), 1 pound per acre, may be applied to grain fields adjacent to dairy pastures, but not after the heads have begun to appear. Use carbaryl on grass pastures or hay fields if armyworms are very numerous (also in cornfields if migration occurs), but warn area beekeepers that you are applying carbaryl. Trichlorfon (Dylox), an organic phosphate insecticide, at 3/4 pound per acre, may be used to within 21 days of harvest, but the straw should not be used for livestock feed.

Corn Insects

Ground beetle Seed corn beetle

Flea beetles continue to damage small corn. Damage is most severe on corn under 10 inches high. If damage is severe and plants are being killed, apply 3/4 pound of carbaryl (Sevin) or 1 1/2 pounds of toxaphene per acre as a band spray over the row.

Seed corn beetles and a ground beetle were observed damaging germinating corn. The seed corn beetles (about 1/4 inch) are brown with a light tan border on their wing covers or a uniform chestnut brown; the larger ground beetle (nearly 1/2 inch) is metallic green. Both move about rapidly and can be found around the seed in cracks or on the surface. On the average, from 1 to 10 percent of the stand had been destroyed in fields, generally in spots. Most problem fields had received a row treatment with either aldrin or heptachlor and we suspect that seed corn beetles are becoming resistant to these insecticides.

Damage is greatest when germination is slow, as during cool periods. Warm temperatures and rapid germination and growth of the seedling plant will lessen problems. No chemical control is recommended at this time.

Black cutworms are causing damage in occasional cornfields. Continue to check fields and watch for missing, cut, or wilting plants. If the stand is being threatened, apply 3 pounds of toxaphene, 2 pounds of carbaryl (Sevin), 2 pounds of diazinon (granules preferred and cover by cultivating), or 1 pound of trichlorfon (Dylox) per acre--directed as a spray at the base of the plants. For best results, use at least 20 gallons of water per acre, and cultivate immediately to cover the spray deposit.

If replanting is necessary, apply and disk-in 3 pounds of aldrin or heptachlor per acre (heavier than normal rates are needed for the larger worms) for corn. Do not use aldrin or heptachlor if soybeans are to be planted, or on dairy farms. On dairy farms, broadcast and disk-in 2 pounds of actual diazinon per acre to control cutworms.

In the central section, corn borer pupation ranges from 60 to 90 percent, emergence from 4 to 20 percent. In northern sections, 20 to 60 percent of the borers have pupated and first emergence occurred this week. Some larvae have not yet pupated in these sections so that egg laying will still be taking place 4 to 5 weeks from now. In the area west of a line from Savana to Pontiac to Petersburg to Edwardsville, where high overwintering populations exist, an average of approximately 3 percent of the field corn acreage could still warrant treatment for first-generation borers. Be prepared to examine early planted fields in late June and early July for borer feeding.

Forage Insects

Alfalfa weevil damage is about over. As the worms mature, they stop feeding and pupate (resting stage). Spraying of the new growth of the second crop may still be justified in occasional alfalfa fields south of a line from Paris to Alton. New spring adults of the alfalfa weevil were observed for the first time laying eggs

in the laboratory this past week. These adults were reared from pupae collected in early March. A small percentage of the spring adults in the field will probably lay eggs. Therefore, we can expect to see small numbers of larvae on alfalfa for another month or more.

It was encouraging to find as high as 8 percent of the alfalfa weevil in one field recently being killed by a parasitic nematode. Wasp parasites have also been found killing the weevil. Wasp parasites of the alfalfa weevil were released this past week in Fulton, Champaign, Christian, Logan, Macon, Mason, McLean, Menard, Piatt, Pike, Sangamon, Scott, and Vermilion Counties. During the last 2 years, this same parasite has been released in counties in the southern sections of the state. In future years, these natural enemies and others will help suppress problems somewhat.

For control of alfalfa weevil larvae, farmers making their own applications should use either malathion or a commercially prepared methoxychlor-diazinon (Alfatox) mixture. Commercial applicators can use either of the above materials or one of the more toxic insecticides like methyl parathion or azinphosmethyl (Guthion). BE SURE AND FOLLOW LABEL DIRECTIONS FOR DOSAGES, HARVEST LIMITATIONS, AND PRECAUTIONS WHEN USING INSECTICIDES.

Potato leafhoppers have migrated into the state from the south and are laying eggs in alfalfa. These small, green, wedge-shaped insects that skid sideways when disturbed cause yellowing of second and third cutting of alfalfa. They not only reduce hay yields, but also reduce the quality of hay by lowering its Vitamin A and protein content.

Leafhopper abundance can be detected by shaking the plants over a piece of paper. If swarms of these insects are observed at cutting time, treatment of the new growth is indicated. Spray when the new growth is 2 to 6 inches tall with either 1 pound per acre of actual carbaryl (Sevin) or methoxychlor. Allow 7 days to elapse between treatment and harvest when using methoxychlor. There is no waiting period for carbaryl.

Stored Grain Insects

Stored grain insects are lying in wait for wheat harvest, which is just around the corner in southern sections. To protect stored wheat from insect damage follow these steps:

1. Sweep up and clean out all old grain, chaff, and other debris inside and around the storage bin.

2. Apply a water-base spray of 1.5-percent premium-grade malathion (mix 3 ounces of 50-57 percent malathion emulsion concentrate per gallon of water) or a 2.5-percent methoxychlor water base (mix 14 ounces of 25-percent methoxychlor-emulsion concentrate per gallon of water) to the ceiling, walls, and floor.

3. If the wheat is to be stored for 1 month or longer, treat it with a premium-grade malathion dust (40-60 pounds of 1-percent dust per 1,000 bushels) or spray (1 pint of 50-57 percent emulsion concentrate in 3 to 5 gallons of water). The dust is best applied on the surface of the wheat in the combine hopper; the spray, as the wheat is augered or elevated into the bin.

Livestock Insects

Its time to begin your barn fly control program before flies become too numerous. The following suggestions will provide the best results:

1. Practice good sanitation. Eliminate fly breeding sites--such as manure, rotting, straw, wet hay, and feed--as often as possible, preferably once per week. Spreading this refuse where it can dry makes it unsatisfactory for fly development.

2. Apply a barn spray to the runoff on ceilings and walls in all livestock buildings. Also spot-spray outside around doors and windows and along fences in the lot. The following insecticides are suggested for this purpose:

Insecticide	Amount per 100 gallons of water	Length of control
dimethoate, 25 percent (Cygon)	4 gallons	4-6 weeks
diazinon, 48 percent	2 gallons	2-4 weeks
diazinon, 50 percent	16 gallons	2-4 weeks
ronnel, 24 percent (Korlan)	4 gallons	1-3 weeks
ronnel, 25 percent	32 pounds	1-3 weeks

Use only ronnel in poultry houses. All materials are cleared for use in dairy, beef, swine, sheep, and horse barns. Always cover all feed and water troughs before spraying. Do not spray animals. Remove animals before spraying the barn.

3. You may also want to supplement good sanitation and barn spraying by using a bait material. Spray baits are preferred since they stick on vertical surfaces and can be applied more extensively to the favorite fly-roosting areas. Use diazinon, ronnel, dichlorvos (DDVP), naled (Dibrom), or trichlorfon (Dylox) in a mixture of 2 parts clear corn sirup and 1 part water. Usually, 1 to 2 ounces of the insecticide in 4 pints of sirup and 2 pints of water is sufficient.

   Barn foggers using insecticides like dichlorvos (DDVP) pyrethrum, and others, provide quick kill of flies during the fogging operation (15 to 20 minutes), but the effect is not lasting. When fly populations become intense (fair to poor sanitation conditions), even twice-a-day fogging fails to provide satisfactory fly control for the farm--even though the barn is kept temporarily free of flies. As normally used, foggers do not leave enough of an insecticide deposit on animals to protect them from flies in pasture. Coarse sprays are best for this purpose.

Homeowner Insect Problems

Sod webworm moths are emerging from larvae that survived the winter. They are now laying the eggs that will produce the first-generation worms. These worms are seldom numerous enough in lawns to cause injury. However, if moths are extremely thick in your yard, watch for signs of damage in 2 to 4 weeks. If treatment is needed, apply carbaryl (Sevin) or diazinon. Usually, it is the second-generation worms (present in late July and August) that build up and cause the damage. It is too soon to predict sod webworm problems for 1967.

In southern sections, bagworm hatch is complete and sprays should be applied immediately. The target date for spraying in the central sections is after June 15, in northern sections after June 30.

Make plans to apply treatments early this year, while the worms are small and easy to kill and before damage is evident. Carbaryl (Sevin), malathion, diazinon, or lead arsenate are all effective. Follow label directions and check the plants that may be injured if sprayed with the insecticide you are using.

Oystershell scale hatch is about complete in the central and southern sections; sprays will control them if applied during the next few weeks. In northern sections, sprays should not be applied until after June 15, when hatch is complete. Careful and thorough sparying with malathion (2 teaspoons of 50-to-57 percent concentrate per gallon of water) will effectively control oystershell scale. An additional treatment will likely be needed in mid-August for second-generation crawlers. Even though scales are killed by spraying, the scale covering will persist for several months.

Lilac borers are laying eggs. Spray the lower stems and larger branches (not the leaves) with DDT. To mix, use 3 tablespoons of 25-percent DDT emulsion concentrate per gallon of water. Repeat the treatment every 3 to 4 weeks during the summer.

In the southern half of the state, first generation elm leaf beetles are skeletonizing the leaves of Chinese elms, and to some extent other species of elms. These small, dirty yellow-to-black worms can be found on the undersides of leaves. If control becomes necessary, spray with carbaryl (Sevin) using 2 pounds of 50-percent wettable powder per 100 gallons of water or with lead arsenate, using 4 pounds of wettable powder per 100 gallons of water. An additional treatment may be needed for second-generation worms in late July or August.

Special Reminder: Agronomy Day is June 15

You'll have a chance to get an up-to-the-minute report on the insect situation at Agronomy Day, June 15, at the Agronomy South Farm, Urbana. The Extension Entomology staff will be on hand to discuss current insect problems. We'll be happy to discuss specific insect problems you may have in your area.

Besides insect information, you'll get information on 18 Agronomy Department research projects that intended to improve farming. The 3-hour tours of research projects begin at 7 a.m. Tours will leave every 10 minutes thereafter until 1 p.m. If it rains, the group will meet in the east side of the football stadium.

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This weekly report was prepard by H. B. Petty, Steve Moore, Roscoe Randell, and Don Kuhlman, University of Illinois College of Agriculture and Illinois Natural History Survey, in cooperation with USDA Agricultural Research Service, Plant Pest Control Branch, from information gathered by entomologists and cooperators who send in weekly reports from their own localities.

INSECT SURVEY BULLETIN
College of Agriculture
University of Illinois
and Natural History Survey, Urbana, Illinois

State / County / Local Groups / U. S. Department of Agriculture Cooperating

FOR IMMEDIATE RELEASE June 9, 1967

INSECT SURVEY BULLETIN NO. 9

This series of weekly bulletins provides a general look at the insect situation (fruit insects excepted), along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions.

Small Grain Insects

Armyworms rate the insect of the week award. Infestations are generally heavy in the thick stands of grains and grasses, particularly in the central and south-central sections. The worms are about 2 weeks behind in their development, while wheat development is normal or slightly ahead. Therefore, the likelihood of head cutting and migrations as grains begin to ripen is much greater. Adjacent corn-fields can be damaged severely by migrating armyworms. Head cutting and migrations are occurring in the southern third of the state as grains ripen. In some fields in the central area, the worms are still small (1/2-inch or less), and treatments will not be needed until about June 12.

Hot weather (90° F.) for several days could be detrimental to armyworms, as diseases become widespread and kill them. Cool weather is favorable to their development. Occasional off-colored armyworms suspected of having disease were found this week. Also watch for little white capsules on the backs of armyworms. These capsules are fly eggs, and the maggot that hatches penetrates the body of the worm, killing it.

Make a field count; if there are 6 or more armyworms per linear foot of drill row, treatment is justified. Fields with a lower count (4 or 5 per linear foot) should be watched closely; if head cutting or migration starts, treat immediately.

Apply 1 1/2 pounds per acre (not 1/2 pound per acre as inadvertently quoted last week) of toxaphene for armyworm control in small grains. At the first sign of migration, treat a strip 1-to-2 rods wide in the wheat and 8-to-10 rows wide in corn, using 2 pounds of toxaphene per acre. There are no restrictions on the use of the grain. Do not feed the straw or corn forage to dairy animals or livestock fattening for slaughter. Do not contaminate fish-bearing waters with toxaphene.

We have suggested that dairy farmers not use chlorinated hydrocarbons on their farms. Toxaphene belongs to this group of chemicals. However, the official label permits its use on dairy farms. If it is used on or adjacent to dairy farms, avoid drift onto pastures and hay crops.

Carbaryl (Sevin), 1 pound per acre, may be applied to grain fields adjacent to dairy pastures, but not after the heads have begun to appear. Use carbaryl on grass pastures or hay fields if armyworms are very numerous (also in cornfields if migration occurs), but warn area beekeepers that you are applying carbaryl. Trichlorfon (Dylox), an organic phosphate insecticide, at 3/4 pound per acre, may be used to within 21 days of harvest, but the straw should not be used for livestock feed.

Corn Insects

Black cutworms were found in a number of cornfields this week in the central section, and the situation deserves careful attention. Some fields showed only slight cutworm damage. In these fields, the worms were 1/2- to 3/4-inch long, or about one-third grown. They will feed for another 2 weeks before pupating. Continue to check fields; watch for leaf feeding, as well as cut, wilting, or missing plants.

If the stand is being threatened, apply 3 pounds of toxaphene, 2 pounds of carbaryl (Sevin), 2 pounds of diazinon (granules preferred and cover by cultivating), or 1 pound of trichlorfon (Dylox) per acre--directed as a spray at the base of the plants. We observed poor control this week where 2 pounds of toxaphene had been used.

For best results, use at least 20 gallons of water per acre, and cultivate or rotary-hoe immediately to incorporate the spray deposit. Results will depend to some extent on soil moisture and on rain immediately after spraying. If conditions remain dry, the worms will be down several inches in the soil and control will be poor.

Seed corn beetles continue to cause damage in some fields where germination was delayed due to lack of moisture. If replanting is necessary, apply diazinon or phorate (Thimet) as a 7-inch band on the soil immediately ahead of the press wheel. Most problem fields had received a broadcast or row treatment of aldrin or heptachlor, indicating a resistance problem. The magnitude of resistance is still unknown.

Flea beetles continue to damage small corn, but should be declining. Damage is most severe on corn under 10 inches high. If damage is severe and plants are being killed, apply 3/4 pound of carbaryl (Sevin) or 1 1/2 pounds of toxaphene per acre as a band spray over the row.

Wireworms are causing damage after planting in some cornfields that were not treated with aldrin or heptachlor. The round, wirelike, brown, hard-shelled worms hollow-out seed or drill holes in the base of stalks, causing the death of the plant.

If the stand is lost, apply 2 pounds of aldrin or heptachlor per acre, disk-in immediately and replant. A spray may give quicker kill than granules. Be careful to avoid drift when spraying.

In the central section, corn borer pupation is now complete; moth emergence ranges from 16 to 32 percent. In northern sections, 76 to 84 percent of the borers have pupated; first emergence occurred last week.

It now appears that borer development is ahead of corn development and that survival of first-generation borers should be generally low. Weather could still change this situation; the next 2 weeks will determine the outcome. The most advanced fields of corn in the problem area should still be watched another 2 to 3 weeks for evidence of borer feeding.

Soybeans

Seed corn maggots were observed damaging soybeans. The maggots eat the germinating seed, and skips appear in the row of emerging beans. It is too late to control the maggot when damage is observed.

Bean leaf beetles were observed eating holes in the leaves of newly emerging soybeans. Damage was not severe. If control becomes necessary, apply carbaryl (Sevin) or toxaphene.

Forage Insects

Alfalfa weevil damage is about over. Spraying the new growth of the second crop may still be justified in occasional alfalfa fields south of a line from Paris to Alton.

Alfalfa weevils have been found for the first time in Warren, Henderson, Mercer, Boone, McHenry, Lee, and Mason counties.

Stored-Grain Insects

Stored-grain insects are lying in wait for wheat harvest, which is just around the corner in southern sections. To protect stored wheat from insect damage, follow these steps:

1. Sweep up and clean out all old grain, chaff, and other debris inside and around the storage bin.

2. Apply a water-base spray of 1.5-percent premium-grade malathion (mix 3 ounces of 50- to 57-percent malathion emulsion concentrate per gallon of water) or a 2.5-percent methoxychlor water-base (mix 14 ounces of 25-percent methoxychlor-emulsion concentrate per gallon of water) to the ceiling, walls, and floor.

3. If the wheat is to be stored for 1 month or longer, treat it with a premium-grade malathion dust (40 to 60 pounds of 1-percent dust per 1,000 bushels) or spray (1 pint of 50- to 57-percent emulsion concentrate in 3 to 5 gallons of water). The dust is best applied on the surface of the wheat in the combine hopper; the spray, as the wheat is augered or elevated into the bin.

4. Clean out the combine hopper and auger. Throw away any grain remaining in the hopper and auger from last season to prevent an infestation of the new grain.

Homeowner Insect Problems

Sod webworm moths are emerging from larvae that survived the winter. The rapid pupation and moth emergence being observed may cause some lawns to be damaged, although first-generation worms are seldom numerous enough in lawns to cause

injury. If moths are extremely thick in your yard, watch for signs of damage in 2 to 4 weeks. If treatment is needed, apply carbaryl (Sevin) or diazinon. Usually, it is the second-generation worms (present in mid-July through August) that build up and cause damage.

In southern sections, bagworm hatch is complete and sprays should be applied immediately. The target date for spraying in the central sections is after June 15, in northern sections after June 30.

Make plans to apply treatments early this year, while the worms are small and easy to kill and before damage is evident. Carbaryl (Sevin), malathion, diazinon, or lead arsenate are all effective. Follow label directions and check the plants that may be injured if sprayed with the insecticide you are using.

Oystershell scale hatch is completed in the central and southern sections; sprays will control them if applied during the next few weeks. In northern sections, sprays should not be applied until after June 15, when hatch is complete. Careful and thorough spraying with malathion (2 teaspoons of 50- to 57-percent concentrate per gallon of water) will effectively control oystershell scale. An additional treatment will likely be needed in mid-August for second-generation crawlers. Even though scales are killed by spraying, the scale covering will persist for several months.

Lilac borers are laying eggs. Spray the lower stems and larger branches (not the leaves) with DDT. To mix, use 3 tablespoons of 25-percent DDT emulsion concentrate per gallon of water. Repeat the treatment in 2 weeks.

In the southern half of the state, first generation elm leaf beetles are skeletonizing the leaves of Chinese elms, and to some extent other species of elms. These small, dirty-yellow-to-black worms can be found on the undersides of leaves. If control becomes necessary, spray with carbaryl (Sevin), using 2 pounds of 50-percent wettable powder per 100 gallons of water or with lead arsenate, using 4 pounds of wettable powder per 100 gallons of water. An additional treatment may be needed for second-generation worms in late July or August.

Adult tree borers are now emerging from their overwintering sites beneath the bark and from crevices in trees. These insects will lay their eggs in cracks in the bark of trees, nearly always selecting a spot where the bark has been injured.

Borer attack can be prevented by spraying the tree trunks with DDT. For 1 gallon of spray, use 2 heaping teaspoons of 50-percent DDT wettable powder, or 3 tablespoons of 25-percent DDT emulsion. Apply the spray at monthly intervals from early June to August.

Picnic beetles (or scavenger beetles) could be abundant this summer. The general wet conditions of most areas in May could result in moderate-to-heavy populations of these annoying insects.

Prior to their emergence as an adult, the larvae feed on decaying vegetation, debris, and fruit buried in the soil. The adult beetles are about 1/4-inch long, shiny black with 4 yellow spots on their back. They are attracted to the odor of food and get into food at picnics and cookouts. They congregate around garbage containers and on kitchen door-and-window screens.

For cookouts, spray the shrubbery and any nearby tall grass or weeds with malathion or diazinon several hours before eating. A space spray of pyrethrins of dichlorvos (DDVP) applied from a pressurized spray can just before eating will provide a quick knockdown of the beetles.

Striped cucumber beetles are numerous in some areas. These black-and-yellow-striped beetles feed upon the new seedlings of squash, cucumbers, melons, and other vine crops as they emerge from the soil. The beetles commonly kill the small seedlings and seriously retard or kill older plants. Carbaryl (Sevin), used as a dust or spray, will control these beetles. Apply when the beetles first appear and as often as necessary thereafter. Apply late in the day.

Upcoming Farm Insect Problems

Grasshoppers are now hatching. Hard, beating rains kill the tiny 'hoppers, but hatch will continue for several weeks and some will survive. We do not expect any severe or widespread grasshopper infestation, but some localized infestations may still be serious. The best time to control grasshoppers is while they are small and still concentrated in their hibernating quarters along roadsides, ditch banks, fence rows, grass waterways, etc. If control becomes necessary, 3/4 pound of carbaryl (Sevin), 1/2 pound of diazinon, or 1 pound of malathion per acre is effective. Toxaphene at 1 1/2 pounds per acre is also effective, but should not be used on dairy farms or adjacent to dairy pastures or hay fields. Do not spray toxaphene near fish-bearing waters. Follow time intervals between application and crop harvest as listed on labels.

Corn rootworm larva feeding on root

Corn rootworms will be hatching within the next week or two. If you suspect or know that you have resistant rootworm problems and did not use a phosphate or carbamate insecticide at planting time, apply it now. Use granules at the base of the plants and incorporate by cultivation.

Rootworms are likely to be found in fields where corn has been grown for 3 years or more in succession. Newly hatched worms are too small to be seen easily. The larvae of rootworms feed on the roots of corn; lodging of corn plants in July and August is a typical symptom of damage.

As soil insecticides, aldrin and heptachlor have provided excellent protection against rootworms until recently. However, a random survey of rootworm populations in 220 fields in 1966 showed moderate-to-high resistance to these chlorinated hydrocarbons in about 10 percent of the fields sampled. The primary problem area is in the northern half of Illinois.

If you have grown corn for several years in succession in the field, if you have used aldrin or heptachlor almost every year, if the corn lodged in August, and if there were lots of green beetles in fresh silks, you probably have resistant northern corn rootworms.

If corn is planted in these resistant rootworm fields, use one of the organic phosphate insecticides as a basal application during cultivation. Organic phosphates applied to corn planted prior to May 15 may not be entirely effective, since they do not control rootworms hatching in late June or early July. Planting-time applications of an organic phosphate applied to corn after May 15 should control rootworms.

Organic phosphate insecticides are the only effective means of controlling resistant rootworm populations. The following organic phosphate insecticides have label approval and are recommended for the control of resistant rootworms in Illinois:

	Rate per acre
phorate (Thimet)	1 pound
Buxten	1 pound
diazinon	1 pound
disulfoton (Di-Syston)	1 pound
parathion	1 pound

A basal application of the insecticide can be made during cultivation. A special applicator on the cultivator directs the phosphate granules at the base of the plant and dirt is thrown over this deposit.

Special Reminder: Agronomy Day Is June 15

You'll have a chance to get an up-to-the minute report on the insect situation on Agronomy Day--June 15, at the Agronomy South Farm, Urbana. The Extension Entomology staff will be on hand to discuss current insect problems. We'll be happy to discuss specific insect problems you may have in your area.

Besides insect information, you'll get information on 18 Agronomy Department research projects that are intended to improve farming. The 3-hour tours of research projects begin at 7 a.m. Tours will leave every 10 minutes thereafter until 1 p.m. If it rains, the group will meet in the east side of the football stadium.

CAUTION: BEFORE APPLYING INSECTICIDES, READ THE LABELS CAREFULLY AND FOLLOW ALL PRECAUTIONS. THIS WILL NOT ONLY INSURE PERSONAL SAFETY, BUT WILL ALSO PREVENT RESIDUE HAZARDS.

NOT FOR PUBLICATION; SPECIAL NOTE TO FARM ADVISERS

There have been questions from homeowners regarding the effectiveness of light traps sold for insect control--especially mosquitoes and flies. Not all harmful or pesky flying insects are attracted to light--especially many flies, gnats, and mosquitoes. If the light traps are nearby, they may actually increase insect damage in a vegetable garden. There are more effective means of insect control for the homeowner than the light trap.

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This weekly report was prepared by H. B. Petty, Steve Moore, Roscoe Randell, and Don Kuhlman, University of Illinois College of Agriculture and Illinois Natural History Survey, in cooperation with USDA Agricultural Research Service, Plant Pest Control Branch, from information gathered by entomologists and cooperators who send in weekly reports from their own localities.

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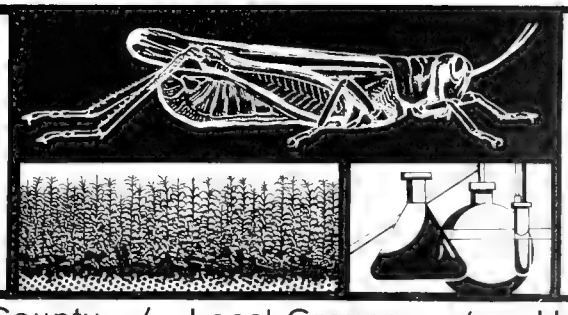


INSECT SURVEY BULLETIN

College of Agriculture
University of Illinois
and Natural History Survey, Urbana, Illinois

State / County / Local Groups / U. S. Department of Agriculture Cooperating

FOR IMMEDIATE RELEASE June 16, 1967

INSECT SURVEY BULLETIN NO. 10

This series of weekly bulletins provides a general look at the insect situation (fruit insects excepted), along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions.

Small Grain Insects

Armyworms continue to cut heads and migrate to adjacent corn from ripening wheat fields. In the southern third of the state, the worms have matured (pupated), and treatments are no longer needed. In the central sections, the worms are rapidly maturing and pupating; treatments should not be needed after June 21. The wheat crop is mature enough so that leaf feeding is no longer important.

If armyworms are eating only the leaves on wheat, ignore them. But if they start to cut heads or migrate, estimate the population and possible damage, and apply toxaphene if necessary. Large numbers of armyworm moths will emerge in another 2 to 3 weeks and fly northward. Late-maturing oats, grassy cornfields, grass pastures, and hay fields should be checked for the presence of armyworms in early-to-mid July in the northern third of the state.

Use 1 1/2 pounds per acre of toxaphene for armyworm control in small grains. For migrating worms, treat a strip 1 to 2 rods wide in the wheat and a strip in the cornfield, using 2 pounds of toxaphene per acre. There are no restrictions on the use of the grain. Do not feed the straw or corn forage to dairy animals or livestock fattening for slaughter. Do not contaminate fish-bearing waters with toxaphene.

We have suggested that dairy farmers not use chlorinated hydrocarbons on their farms. Toxaphene belongs to this group of chemicals. However, the official label permits its use on dairy farms. If it is used on or adjacent to dairy farms, avoid drift onto pastures and hay crops.

A few live specimens of the cereal leaf beetle were found recently in Vermilion, Kankakee, Iroquois, Woodford, and Edgar counties--according to Mr. Robert Bills, Plant Pest Control Division, Agricultural Research Service, USDA. This is the first time the beetle has been found in Woodford and Edgar counties. Plans are underway to conduct eradication spray programs in each area sometime in July and again next spring.

Corn Insects

Black cutworms are still damaging some cornfields. Continue to check fields and watch for cut, wilting, or missing plants and the presence of worms. If you find most of the worms between 1 1/2 and 2 inches long, it is probably too late for treatment, since these worms will stop feeding and pupate in a day or two.

If control is necessary, apply 3 pounds of toxaphene, 2 pounds of carbaryl (Sevin), 2 pounds of diazinon (granules preferred and cover by cultivating), or 1 pound of trichlorfon (Dylox) per acre--directed as a spray at the base of the plants in a narrow 6- to 8-inch-wide band.

For best results, use at least 20 gallons of water per acre, and cultivate or rotary hoe immediately to incorporate the spray deposit. Cultivation is preferred over hoeing. Results will depend on soil moisture and rain immediately after spraying. If conditions remain dry, the worms will be down several inches in the soil and control will be poor.

Corn rootworms are expected to begin hatching this week. If you suspect or know that you have a resistant rootworm problem and you did not use a phosphate or carbamate insecticide at planting time, apply it now. Use granules at the base of the plants and cultivate them in.

The following insecticides have label approval at 1 pound of actual chemical per acre and are recommended for control of resistant rootworms in Illinois: phorate (Thimet), 0-5355 (Buxten), diazinon, disulfoton (Di-Syston), and parathion.

European corn borer egg laying and hatch are complete in the southern sections. Peak egg laying occurred this week in the central and south-central sections, but egg laying will continue for another week or ten days. A few of the most advanced fields (45 inches or taller from ground level to the tip of the tallest leaf) may be damaged in this area. Treatments may begin this week. In north-central and northern sections, peak egg laying will occur during this week (June 18) and next week (June 25). Treatments, if needed, should be applied during the last week of June (north-central section) or the first week of July (northern section). In general, borer development is ahead of corn development; except for the occasional, rapidly growing, advanced fields, damage should be light.

To decide whether an insecticide can be profitably applied, measure the tassel ratio of the field and count the percent of plants with recent whorl leaf feeding. To determine the tassel ratio, measure the height of the plants with leaves extended; split the stalk open and measure from the tip of the developing tassel to the base of the plant; divide the tassel height by the plant height; and multiply by 100. This figure is the tassel ratio. If the tassel ratio is at least 35 (preferably 40 to 45) and at least 75 percent of the plants show whorl feeding, then treatment is justified. Use 1 pound of actual diazinon in granular form per acre or 1 1/2 pounds of carbaryl (Sevin) as granules. For spraying, use the same amount of actual insecticide per acre, and direct the spray to the upper third of the plant. Aerial applications should be granules, not sprays or dusts.

Flea beetles are still feeding on corn. Damage is most severe on newly emerging corn. Corn over 6 to 8 inches tall will usually outgrow damage. If feeding is heavy and plants are being killed, apply 3/4 pound of carbaryl (Sevin) or 1 1/2 pounds of toxaphene per acre as a band spray over the row. Carbaryl will also control thrips.

Thrips are abundant in the whorl leaves of corn. A few fields have been reported as being damaged by this insect. They are black or yellow insects about 1/16-inch long. Their rasping-sucking mouth parts leave tiny white streaks on the leaves. If moisture is ample, damage does not usually become severe. If plants are being seriously injured, carbaryl (Sevin) at 1 pound per acre will provide control.

Common stalk borers have been tunneling in the whorl leaves of occasional corn plants. These striped borers are whitish-brown with a distinct purple-to-black band around the middle of their bodies. The unfolding leaves of corn have irregular holes from feeding. Damage occurs in plants along fence rows, ditchbanks, and grass waterways or where there was a weed problem the previous year. Injury is of little consequence; by the time the worms are found, it is too late for chemicals to be effective. Keep weeds under control in August and September to help reduce the problem for next year.

Corn leaf aphids were found in the whorl leaves of corn for the first time this week. There were just a few aphids in occasional plants in the field. It is too soon to make predictions on this insect.

Occasional fields of corn and soybeans are being damaged by white grubs. These large grubs will stop feeding and pupate soon, and nothing can be done to protect the planting at this time. The grubs caused injury in these same fields in 1966--fields that had not been treated in previous years with a soil insecticide.

Forage Insects

Potato leafhoppers do not appear as abundant this year as in the past. No yellowing of second-growth alfalfa was observed this week. However, if swarms of these small (1/16-inch), green, wedged-shaped insects are observed on the new growth of the second crop, or at the time the second crop is cut, treatment is indicated. Use either carbaryl (Sevin) or methoxychlor at 1 pound per acre. Allow 7 days to elapse between treatment and harvest when using methoxychlor. There is no waiting period for carbaryl.

A few small garden webworms were observed in alfalfa in the southwestern section. It is too soon to make accurate predictions on this insect. Normally, this insect is most destructive in late summer on new seedings of alfalfa.

Livestock Insects

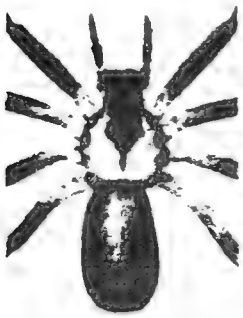
Horn flies and stable flies are increasing on pastured cattle. A few face flies were also observed on pastured cattle. Begin control programs now before the flies become numerous. When abundant, these flies can easily reduce milk flow by 15 to 20 percent and beef gains as much as a half pound per day. It is not difficult to pick up an extra $10 per animal over and above treatment costs by using an effective control program.

For pastured dairy cattle, apply 1 to 2 ounces of an oil-base spray of 2 percent Ciodrin per animal, every 3 to 4 days for best results. A 1-percent dichlorvos (DDVP) or 0.1-percent pyrethrin oil-base spray applied at the rate of 1 or 2 ounces per animal every day or two can also be used. But these are less effective than Ciodrin, particularly against the face fly. Water-base sprays of the same material may be used, but control is less effective. Pay particular attention to the animal's legs and undersides when spraying.

For pastured beef cattle, apply a water-base spray or 0.5-percent toxaphene, using 1 to 2 quarts per animal every three weeks. Allow 28 days to elapse between treatment and slaughter. Back rubbers, compared with spraying, are only partially effective against horn flies and stable flies. A 2-percent Ciodrin oil-base spray--applied at the rate of 1 to 2 ounces per animal every 3 to 4 days from an automatic sprayer--is an excellent way to control flies on pastured beef cattle, if the situation permits its use.

Homeowner Insect Problems

The "dive bombers" are back again. Mosquitoes are abundant in many areas, probably as a result of the wet weather during recent weeks. To reduce mosquito numbers, follow these steps: (1) Eliminate standing water in such places as eave troughs, old tires, tin cans, childrens' toys, storm sewers, etc. (2) Apply a water-base spray containing 1-percent malathion (2 ounces of 50- to 57-percent liquid emulsion concentrate per gallon of water) to shrubbery and tall grass. Repeat the treatment every week or two if needed. (3) Keep screens on doors and windows in good repair. (4) Hang plastic resin strips (2" x 10") containing 20-percent dichlorvos (DDVP)--one strip per 1,000 cubic feet of space, or about one per room. These strips will kill mosquitoes and flies for 4 to 6 weeks. As an added precaution, hang the strips out of reach of children and away from fish bowls and food counters. A 0.1-percent pyrethrin space spray--applied from a pressurized spray can--can be used for quick knockdown in place of the dichlorvos resin strips. Frequent treatments will be needed during problem periods. (5) When entering mosquito-infested areas, use a repellent. One of the most effective mosquito repellents is DEET (diethyltoluamide). (6) For quick knockdown at cook-outs, outdoor parties, or picnics, use either 0.1-percent pyrethrin or 0.5-to-1 percent dichlorvos (DDVP) as an oil- or water-base space spray. Spray the mist lightly beneath tables and chairs and into the air for a few feet around the area. Repeat the treatment as needed.

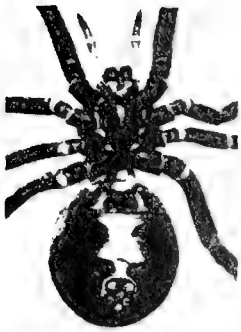


Brown recluse spider

The brown recluse spider, first found in 1957 in Jackson County, is present as far north as central Illinois. This spider, probably of Southern or Southwestern origin, is apparently finding conditions suitable for development in the state. Just recently, large numbers were found in a school building in one area. Both the male and female brown recluse spiders bite and inject a toxin, but the bite is seldom fatal. A stinging sensation followed by pain usually occurs, the area becomes swollen, a small blister arises, and local pain is intense. Tissues surrounding the bite are killed and gradually slough off over a period of 6 to 8 weeks, leaving a sunken scar the size of a penny to a half-dollar. Sometimes, there is a general systemic reaction to the bite.

The brown recluse spider has a dark fiddle-shaped mark on its head and back and is light fawn to brown. It prefers to live in and near buildings and homes; it spins an irregular web.

The only other poisonous spiders known to exist in the state are the black widows. they are present throughout the entire state and can be easily recognized by the orange or red hour-glass design on the underside of the abdomen.



Black widow spider

Infested areas in homes and buildings should be sprayed with 2-percent chlordane or 5-percent DDT from a pressurized spray can. In addition, apply 2-percent chlordane as a water-base spray to the outside foundation wall of your home in the spring and fall to help prevent spiders and other insects from entering.

Chiggers annoy campers, picnickers, hikers, fishermen, berry pickers--even homeowners in their yard on occasion. These tiny mites burrow into a skin pore and cause a red blotch. The blotches itch and do not subside for a week or more. There is little that can be done to alleviate the problem once the mites become embedded. The mites attack where clothing is tight against the skin.

When entering possible chigger-infested areas, use a repellent such as DEET (diethyltoluamide). Take a warm, soapy shower or bath immediately after returning from a chigger-infested area. It takes the mites several hours to penetrate into the skin; they can often be washed off before becoming embedded.

To reduce chigger infestations in a home yard, spray lightly over grass, low flowers, and shrubs with either malathion or diazinon.

First-generation mimosa webworms will be hatching soon on honey locust and mimosa trees. These are small, gray-to-brown, striped, active caterpillars that use a silken thread to tie a bunch of leaflets together. They skeletonize these leaflets and then form a new nest. The old nest turns brown and the leaflets die. There will be a second generation and possibly a third generation later on. Spray infested trees with malathion, using 2 teaspoons of emulsion concentrate per gallon of water. This is 1 quart in 100 gallons of water. Repeat treatments may be needed.

Euonymus scale crawlers are setting up housekeeping on the branches and leaves of euonymus. The male scales are white and quite conspicuous; the female scales are brown and less readily seen. Infested plants should be sprayed immediately and again in about two weeks. Apply malathion, using 2 teaspoons of 50-to-57-percent emulsion concentrate per gallon of water.

Begin bagworm spraying in the central sections this week. Carbaryl (Sevin), malathion, diazinon, or lead arsenate are all effective. Follow label directions and check the plants that may be injured if sprayed with the insecticide you are using.

In the southern half of the state, first generation elm leaf beetles are skeletonizing the leaves of Chinese elms, and to some extent other species of elms. These small, dirty yellow-to-black worms can be found on the undersides of leaves. If control becomes necessary, spray with carbaryl (Sevin), using 2 pounds of 50-percent wettable powder per 100 gallons of water; with lead arsenate, use 4 pounds of wettable powder per 100 gallons of water. An additional treatment may be needed for second-generation worms in late July or August.

CAUTION: BEFORE APPLYING INSECTICIDES, READ THE LABELS CAREFULLY AND FOLLOW ALL PRECAUTIONS. THIS WILL NOT ONLY INSURE PERSONAL SAFETY, BUT WILL ALSO PREVENT RESIDUE HAZARDS.

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This weekly report was prepared by H. B. Petty, Steve Moore, Roscoe Randell, and Don Kuhlman, University of Illinois College of Agriculture and Illinois Natural History Survey, in cooperation with USDA Agricultural Research Service, Plant Pest Control Branch, from information gathered by entomologists and cooperators who send in weekly reports from their own localities.

INSECT SURVEY BULLETIN

College of Agriculture
University of Illinois
and Natural History Survey, Urbana, Illinois

State / County / Local Groups / U. S. Department of Agriculture Cooperating

FOR IMMEDIATE RELEASE June 23, 1967

INSECT SURVEY BULLETIN NO. 11

This series of weekly bulletins provides a general look at the insect situation (fruit insects excepted), along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions.

Corn Insects

European corn borer egg laying is declining in the central sections; egg laying is presently at its peak in the northern sections (north of Highway 6). In the west-southwest and west-central sections, egg counts ranged from 30 to 100 per 100 plants; 20 to 90 percent of the plants were showing recent whorl feeding in the most advanced fields. The average height of the corn in these fields was 40 to 57 inches, with tassel ratios of from 8 to 26. Egg counts in the northern sections varied from 20 to 100 per 100 plants (mostly unhatched); 5 to 20 percent of the plants were showing recent whorl feeding in the most advanced fields. The average height of the corn in these fields was 35 to 44 inches, with tassel ratios of from 5 to 12.

Examine the rapidly-growing, most-advanced fields in west-southwest (especially in bottom land areas) and west-central sections for corn borer infestations. Treatments, if needed, should be underway in the west-southwest section and should be started this week in the west-central section. Begin checking the advanced fields in the northern sections this week for corn borer infestations. Treatments, if needed, should begin about July 1.

In many areas, there are no exceptionally advanced fields, and the moths are scattering their eggs over many fields instead of concentrating them in a few. The heavy rains this week may have killed many moths. In addition, a protozoan disease is quite common in recently collected pupae and adults (60-percent infection). The rains plus the disease could shorten the egg-laying period and help reduce the number of corn borers.

To decide whether an insecticide can be profitably applied, measure the tassel ratio of the field and determine the percent of plants with recent feeding in the whorl leaves. To determine the tassel ratio, measure the height of the plants with leaves extended; split the stalk open and measure from the tip of the developing tassel to the base of the plant; divide the tassel height by the plant height; and multiply by 100. That figure is the tassel ratio. If the tassel ratio is at least 35 (preferably 40 to 45) and at least 75 percent of the plants show whorl feeding, treatment is justified. Use 1 pound of actual diazinon in granular form per acre or 1 1/2 pounds of carbaryl (Sevin) as granules. For spraying, use the same amount of actual insecticide per acre, and direct the spray to the upper third

of the plant. Aerial applications should be granules, not sprays or dusts. Allow 10 days between treatment and ensiling of corn when applying diazinon; carbaryl has no waiting period. Commercial applicators may prefer to use EPN or parathion; they also provide good control of the corn borer. Parathion has a 12-day waiting period between treatment and harvest; EPN, a 14-day waiting period.

Black cutworm populations are declining as the worms pupate. Damage from this generation is practically over, with the possible exception of the northern sections.

Corn rootworms can be found feeding on corn roots in occasional cornfields. The worms are less than half grown. It is too soon to predict overall abundance and damage.

Common stalk borers are feeding in the whorls of some corn plants and the stalks of oats. These whitish-brown striped worms with a purple band around their middle cause irregular holes in unfolding corn leaves; in oats, the heads turn white prematurely. Damage is most common along the edges of fields--especially adjacent to fence rows, ditch banks, roadsides, grass waterways, etc. Yellow striped armyworms (velvety black with yellow stripes) are also present in the whorls of occasional corn plants. Injury is of little consequence and by the time the stalk borers or armyworms are found, it is too late for an insecticide to be effective.

Small Grain Insects

Armyworm populations have decreased rapidly and control measures need only be applied in a few special instances. It is now too late for maximum benefits from control programs. Armyworm moths are large buff-colored insects; they usually have a tiny white dot on the top of each front wing. In a week or two, they will emerge in large numbers and fly northward, unless unseasonably cool or extremely wet weather keeps them from flying. In the northern sections, late-maturing oats, grassy cornfields, and grass pastures should be watched from early-to-mid July for the presence of armyworms.

Soybean Insects

Clover root curculio and clover leaf weevil are damaging small soybeans planted after clovers. Damage has also been observed in marginal rows of soybeans next to a clover field that has been recently plowed or cut. The weevils are gray- or brown-snout beetles that play dead when disturbed. They eat notches in the leaves and gouge holes in the stem near ground level. The larvae of the clover root curculio are grayish-white legless worms that feed on the roots, pitting and scarring the surface and occasionally burrowing into the root. No control is available for the larvae. If needed for adults, band spray 1 pound of carbaryl or 1 1/2 pounds of toxaphene per acre. Carbaryl may result in a mite build-up in occasional fields. Other insecticides may also be effective.

Yellow and black grass thrips (about 1/16-inch long) are abundant in the whorl leaves of corn and on soybean leaves. A few fields have been reported as being damaged by these insects. The thrips rasp the surface of the leaves, making silvery patches. Plants will usually outgrow the damage and rain helps. If plants are being seriously injured, use carbaryl (Sevin) at 1 pound per acre in corn or malathion at 1 pound per acre in soybeans. Carbaryl may result in a mite build-up if used on soybeans.

Forage Insects

Spittlebug adults are numerous in many clover and alfalfa fields in northern sections. Some froth masses are still present. But as the bugs mature, these masses will disappear. The adults are tan, brown, black, or brown-and-white mottled, wedged-shaped, jumping insects (1/4-inch). They will spread out now and feed on a variety of crops until late August. Then they will return to the clover fields to lay their eggs.

Homeowner Insect Problems

Plan your home fly control program now before flies become too numerous. Follow these steps:

1. Be sure garbage and refuse containers have a solid bottom and a tight lid. They should be emptied at least once (preferably twice) each week.

2. Scatter boron (Borax) powder on the soil beneath garbage or refuse containers to kill any maggots that may pupate on the soil.

3. Keep window and door screens in good repair to prevent flies from entering.

4. In attached garages, under breezeways, or on porches, hang one dimetilan fly band (Snip fly band) per 75 square feet. Wipe the bands about once each month with a damp rag to remove dust deposits. Flies landing on the bands will be killed before they can enter the house. The bands will kill flies for a full season.

5. Hang one 20-percent dichlorvos (DDVP Vapona) plastic resin strip for every 1,000 cubic feet of space (about one per room) in the kitchen and in other rooms where flies congregate. The dichlorvos vaporizes slowly, killing flies and mosquitoes without harming people or pets. These strips are effective for about 4 to 6 weeks. As an added precaution, hang the strips out of the reach of children and away from fish bowls or food counters.

   In place of the dichlorvos resin strips, you can use a 0.1-percent pyrethrum space spray, applied from a pressurized can for quick knockdown of flies and mosquitoes. Repeat treatments will be needed with the space spray.

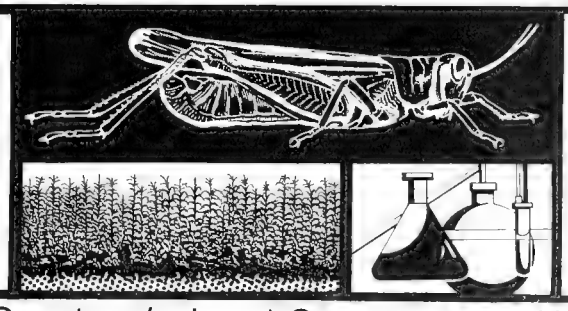
First-generation elm leaf beetles are skeletonizing the leaves of Chinese elms in the central sections. The small dirty yellow-to-black worms feed on the undersides of the leaves. Commonly, they congregate in large numbers next to the trunk at ground level when ready to pupate. A spray of carbaryl (Sevin)--using 2 pounds of 50-percent wettable powder per 100 gallons of water--or lead arsenate--using 4 pounds of wettable powder per 100 gallons of water--is effective. An additional treatment may be needed in late July in southern sections, in August in the central sections, for second-generation worms.

Cottony maple scales are present in some areas on soft maples and other trees and shrubs. The appearance of white waxy masses (contain hundreds of eggs) on twigs and branches is the identifying characteristic. (Heavily infested branches may look somewhat like they are decorated with popcorn.) These eggs laid by the

overwintering female will now hatch, and the young scales will move to the leaves to suck sap. At times, infestations may be heavy enough to kill twigs and branches--even entire trees. Apply a malathion spray (1 quart of 50- to 57-percent emulsion concentrate per 100 gallons of water) in early July (central sections) after the eggs have hatched.

CAUTION: BEFORE APPLYING INSECTICIDES, READ THE LABELS CAREFULLY AND FOLLOW ALL PRECAUTIONS. THIS WILL NOT ONLY INSURE PERSONAL SAFETY, BUT WILL ALSO PREVENT RESIDUE HAZARDS.

This weekly report was prepared by H. B. Petty, Steve Moore, Roscoe Randell, and Don Kuhlman, University of Illinois College of Agriculture and Illinois Natural History Survey, in cooperation with USDA Agricultural Research Service, Plant Pest Control Branch, from information gathered by entomologists and cooperators who send in weekly reports from their own localities.



INSECT SURVEY BULLETIN

College of Agriculture
University of Illinois
and Natural History Survey, Urbana, Illinois

State / County / Local Groups / U. S. Department of Agriculture Cooperating

FOR IMMEDIATE RELEASE June 30, 1967

INSECT SURVEY BULLETIN NO. 12

This series of weekly bulletins provides a general look at the insect situation (fruit insects excepted), along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions.

Corn Insects

European corn borer moth flight and egg-laying are almost complete in the southern two-thirds of Illinois; egg hatch is more than 90 percent complete in this area. Egg-laying is declining in the northern sections (north of Highway 6). In the west-southwest and west-central sections, some fields had 30 to 60 percent of the plants showing recent whorl feeding; a few advanced fields had 100-percent whorl feeding. Corn heights in these fields ranged up to 78 inches, with tassel ratios of 22 to 53. Many cornfields are over 50 inches in height in the western part of the state.

Examine the rapidly-growing, most advanced fields (especially in bottomland areas) for corn borer infestations. For optimum results, treatments in the southwest section should be completed by now. Treatments, if needed, should be underway in the west-central section. In the northern sections, treatments, if needed, should begin about July 1.

Many fields of advanced corn now have 30 to 60 percent of the plants showing whorl feeding and a tassel ratio of 30 or over. These fields do not justify treatment for control of first-generation corn borers. However, in these fields that have an adequate tassel ratio for borer survival (35 or more), there is a high potential for a second-generation brood to appear in late July.

The combination of rains, delayed planting, and earlier-than-usual borer development has thwarted the corn borer in most areas. The mortality rate of newly hatched larvae has been high on corn with a tassel ratio of less than 35. Many plants with whorl feeding 10 days ago are now free of it, due to the high mortality rate of the larvae.

To decide whether an insecticide can be profitably applied, measure the tassel ratio of the field and determine the percentage of the plants with recent feeding in the whorl leaves. To determine the tassel ratio, measure the height of the plants with leaves extended; split the stalk open and measure from the tip of the developing tassel to the base of the plant; divide the tassel height by the plant height; and multiply by 100. That figure is the tassel ratio. If the tassel ratio is at least 35 (preferably 40 to 45) and at least 75 percent of the plants show whorl feeding, treatment is justified. Use 1 pound of actual diazinon in granular

form per acre or 1 1/2 pounds of carbaryl (Sevin) as granules. For spraying, use the same amount of actual insecticide per acre, and direct the spray to the upper third of the plant. Aerial applications should be granules, not sprays or dusts. Allow 10 days between treatment and ensiling of corn when applying diazinon; carbaryl has no waiting period. Commercial applicators may prefer to use EPN or parathion; they also provide good control of the corn borer. Parathion has a 12-day waiting period between treatment and harvest; EPN, a 14-day waiting period.

Corn rootworms are feeding on corn roots in occasional cornfields. The worms are less than half-grown. An exception was a field of 4- to 8-inch corn in the west-central section; in it, almost full-grown northern corn rootworm larvae were causing damage.

If corn borers and rootworms are a problem in the same field, a granular application of a phosphate insecticide will give some protection against both pests. Some of the granules will stick in the whorl and kill the borers. The rest will drop to the ground. Use hillers to throw the soil around the base of the plants. This method will not give maximum control of either rootworm or corn borers. For rootworm control, it would be better to concentrate the phosphate at the base of the plants and incorporate by cultivation.

Garden symphylids were found in the second field of corn on record in Illinois. This is a small, white, centipede-like insect with a pair of legs on each body segment and bead-like antennae. No known insecticide will give good control. Soil insecticides such as aldrin or heptachlor are ineffective. As near as can be determined, there is no relation between cropping practice and the incidence of this pest.

Corn leaf aphids have been found in a few fields in southwestern Illinois. It is still early to determine how serious this insect will be in 1967, since it migrates into Illinois.

Pale-green leafhoppers have been observed in some young stands of corn. When they are numerous, damage can occur. If they are damaging young corn, carbaryl (Sevin) at 1 pound per acre will control them.

Livestock Insects

Stable flies on cattle (both in pasture and drylot) are more numerous than is normal for this time of year. At the same time, face flies are few in number, as are horn flies. Flies on cattle kept in drylot are best controlled by good sanitation practices (to eliminate breeding sites) and by using barn sprays. Apply a barn spray to the point of runoff, using either dimethoate (Cygon), diazinon, or ronnel (Korlan). All are cleared for use in dairy, beef, swine, sheep, and horse barns. Cover feed and water troughs before spraying. Do not spray the animals themselves.

Flies on animals on pasture are best controlled by spraying the cattle with an insecticide. For pastured dairy cattle, apply 1 to 2 ounces of an oil-base spray of 2-percent Ciodrin per animal every 3 to 4 days. A 1-percent dichlorvos (DDVP) or a 0.1-percent pyrethrin oil-base spray applied at the rate of 1 to 2 ounces per animal every day or two can also be used. Water-base sprays of the same material may be used, but control is less effective. Pay particular attention to the legs and underside of the animals when spraying.

For pastured beef cattle, apply a water-base spray of 0.5-percent toxaphene, using 1 to 2 quarts per animal every three weeks. Allow 28 days to elapse between treatment and slaughter. Compared with spraying, back rubbers are only partially effective against horn flies and stable flies. A 2-percent Ciodrin oil-base spray--applied at the rate of 1 to 2 ounces per animal every 3 to 4 days from an automatic sprayer--is an excellent way to control flies on pastured beef cattle, if the situation permits its use.

Forage Crop Insects

Striped blister beetles have been observed feeding on alfalfa. They rarely do much damage to the plants, but can cause alfalfa that is used as green chop to be unpalatable when these beetles are mixed in the forage. If these beetles are numerous in forage, cut and fed in drylot, they can be controlled with 1 pound of carbaryl (Sevin) per acre. There is no limitation between spraying and harvest.

Soybean Insects

Thrips, commonly found last week on the whorl leaves of corn and on soybean plants, have been reduced by rains and rapidly growing corn. These insects rasp the leaves and give the leaves a silvery appearance.

Homeowner Insects

Squash bugs are appearing on vine crops in vegetable gardens. As adults, these insects are very difficult to kill. Carbaryl (Sevin) will control newly hatched nymphs. Apply as dust or as a thorough spray to both sides of the leaves. Insecticides should be applied late in the day to vine crops to avoid bee kill.

Ants entering homes at this time of year can be successfully controlled with a foundation spray of 2-percent chlordane. For the average-sized house, use 1 pint of 45-percent chlordane in 3 gallons of water and spray the foundation to the point of runoff. Spray cracks and expansion joints around walks and steps. This treatment will also reduce many other nuisance insects such as crickets and waterbugs.

First-generation elm leaf beetles are skeletonizing the leaves of Chinese and other elms in the central and northern Illinois areas. The small, dirty yellow-to-black worms feed on the undersides of the leaves. Commonly, they congregate in large numbers next to the trunk at ground level when ready to pupate. A spray of carbaryl (Sevin)--using 2 pounds of 50-percent wettable powder per 100 gallons of water--or lead arsenate--using 4 pounds of wettable powder per 100 gallons of water--is effective. An additional treatment may be needed in late July in southern sections for second-generation worms.

Bagworm hatch is complete in northern Illinois and larvae are feeding. Treatments should be made when the worms are young and easy to kill, before severe damage is done. Carbaryl (Sevin), malathion, diazinon, or lead arsenate are effective. Follow directions on the label and check the plants that may be injured if sprayed with the insecticide you are using.

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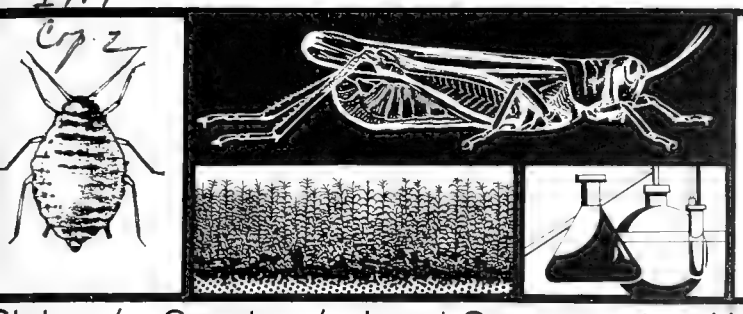
This weekly report was prepared by H. B. Petty, Steve Moore, Roscoe Randell, and Don Kuhlman, University of Illinois College of Agriculture and Illinois Natural History Survey, in cooperation with USDA Agricultural Research Service, Plant Pest Control Branch, from information gathered by entomologists and cooperators who send in weekly reports from their own localities.



INSECT SURVEY BULLETIN
College of Agriculture
University of Illinois
and Natural History Survey, Urbana, Illinois

State / County / Local Groups / U. S. Department of Agriculture Cooperating

FOR IMMEDIATE RELEASE July 7, 1967

INSECT SURVEY BULLETIN NO. 13

This series of weekly bulletins provides a general look at the insect situation (fruit insects excepted), along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions.

Corn Insects

Corn leaf aphids can be found in the whorl of corn in the southern half of the state. Individual aphids--not colonies--can be found in some cornfields in the northern half of the state. Aphids are also present on grasses and will soon move to the corn. Many winged forms were observed this week indicating that aphids are migrating at this time. Occasional fields of corn in the late whorl stage (occasional tassels showing) in the southern half of the state have heavy aphid numbers. Leaf aphid infestations usually begin when the tassel is deep in the whorl, reaching their peak between tassel emergence and the end of pollen shed. Infestations decline rapidly after pollen shed except for occasional fields where populations remain high until harvest.

To decide whether an insecticide can be profitably applied, examine fields of corn grown for grain when a few tassels begin to show. If 50 percent or more of the plants have some aphids (a few heavy) and corn is under stress (as from low soil moisture, fertility, disease, etc.), treatment is justified. If growing conditions are good, continue to watch the infestation; if 15 percent or more of the plants become heavily loaded with aphids, then treat immediately. Seed fields should be treated if 50 percent or more of the plants have some aphids (only a few heavy), even if the corn is not under stress. In general, applications after all the silks have dried are disappointing.

Spray treatments by ground or air with 1 pound of malathion or diazinon per acre will control the aphids. Allow 5 days between treatment and harvest for grain, ensilage, or stover when using malathion. There is no waiting period between treatment and harvest for grain when using diazinon, but allow 10 days to elapse before making ensilage or stover. Seed producers may prefer to use either diazinon or phorate (Thimet) as granules at 1 pound per acre of actual insecticide if corn is still in the late whorl stage. Use phorate only on male-sterile corn to avoid potential hazards to detasselers.

European corn borer egg laying is about complete in northern sections, and some borers are beginning to tunnel into stalks. Insecticide effectiveness is greatly reduced once the borers leave the whorl and enter the stalk. Treatments should

have been completed by this week in this area. Many fields were observed with from 20 to 50 percent of the plants infested, but a 75-percent infestation of plants is the threshold for treatment. A large seed crop of first-generation borers exists so that second-generation populations could be high in August. The second-generation moths will concentrate their egg laying in the late-maturing cornfields. The area most likely to experience second-generation corn borer damage lies west of Highway 51 and north of Highway 460.

Corn rootworm larvae continue to feed on corn roots. Damage has been reported in a few fields of continuous corn where aldrin or heptachlor have been used for several years. This indicates a continued buildup and spread of the resistance problem reported in past years. Two reports of rootworms killing small, newly emerging corn have been received. The worms were feeding on the underground portion of the stalk, much like a wireworm, eating the heart and killing the plant. A basal treatment with a phosphate insecticide cultivated-in may be helpful if damage persists.

In general, the worms are maturing rapidly and there will be little to gain from applying a granular phosphate or carbamate insecticide (diazinon, phorate, parathion, disulfoton, Buxten) at the base of the plant as a lay-by treatment. The exception to the rule is if the majority of the worms are still small. A mature rootworm larva is about 1/2-inch long.

Soybean Insects

Leafhoppers are damaging both soybeans and small corn, particularly in western sections. These small, green, "gnat-like" insects are the same leafhopper that attacks alfalfa. They cause leaves to yellow and brown (die back from tip) when severe. The term "hopper burn" is used to describe their injury on potatoes. If needed, a spray containing 1 pound of malathion per acre for soybeans or 1 pound of carbaryl (Sevin) per acre for corn will control this insect.

Yellow and black grass thrips are still present on soybeans and in the whorl leaves of corn. Their feeding appears as tiny, white streaks on the leaves. They also can be found feeding in the flowers, and there is some evidence that they may cause a distorted pod formation. Some soybean fields in southern sections have high populations (20 per leaf) and damage is evident. If plants become seriously affected, use a spray of malathion at 1 pound per acre in soybeans or carbaryl (Sevin) at 1 pound per acre in corn.

Two-spotted spider mites have been reported damaging soybeans in the west-southwest section. Mites are more likely to become numerous when the weather turns hot and dry. These mites appear as small black spots on the undersides of leaves. Usually, a fine web is also apparent. Affected soybeans show stunting, yellowing, and browning of leaves, but the infestation is usually spotty within a field. Severely affected fields should be sprayed with 1/2-pound of azinphosmethyl (Guthion) or 3/4-pound of carbophenothion (Trithion) per acre to control the mites. These insecticides should be applied only by experienced operators, as they are highly toxic. Azinphosmethyl has a 21-day waiting period between treatment and harvest, carbophenothion a 7-day waiting period. Do not feed soybeans sprayed with either of these insecticides as forage to dairy animals or livestock fattening for slaughter.

Small-Grain Insects

An aerial spray program to eradicate the cereal leaf beetle was started this week, according to Mr. Robert Bills, Plant Pest Control Division, Agricultural Research Service, USDA. Technical grade malathion (9.7 pounds per gallon) was applied by air at 4 fluid ounces per acre. Mile-radius areas will be treated at each site where a few cereal leaf beetles (1 to 3) were found recently in Will, Kankakee, Iroquois, Vermilion (overlap on treatment into Champaign County), Edgar, and Woodford Counties. These infestation sites in Will, Kankakee, and Vermilion Counties are different from those treated this spring. The beetle had not been found in Iroquois, Edgar, and Woodford Counties until just recently. By continued detection and treatment, it is hoped that the insect can be prevented from becoming established in Illinois.

Forage Insects

Potato leafhoppers are damaging alfalfa in some areas. These small, green, wedge-shaped insects (1/16-inch) cause yellowing, purpling, and stunting of alfalfa, and reduce both the quantity and quality of the hay. If swarms of these leafhoppers are observed at cutting time, treatment of the new growth is indicated. Fields with severe damage will not recover. Thus, clip and remove; then spray the new growth. Spray when the new growth is 2 to 6 inches tall with either 1 pound per acre of actual carbaryl (Sevin) or methoxychlor. Allow 7 days to elapse between treatment and harvest when using methoxychlor. There is no waiting period for carbaryl. Carbaryl is toxic to bees and should not be applied to alfalfa in bloom.

Small grasshoppers are abundant in fence rows, ditch banks, roadsides, grass waterways, and hay fields in some localized areas. The infestation is not generally heavy. The areas of high infestation were most likely those that rain showers missed in June when the overwintered eggs were hatching. Most of the eggs should have hatched by now. If young 'hoppers are numerous, spray immediately before they have a chance to migrate to corn or soybeans.

Carbaryl (Sevin) at 3/4 pound per acre as a spray is best for grasshoppers. Diazinon at 1/2 pound, malathion at 1 pound, or naled (Dibrom) at 3/4 pound per acre are also effective. When treating forage crops, allow 7 days between treatment and harvest with diazinon, 4 days with naled. There is no waiting period for carbaryl or malathion.

Homeowner Insect Problems

Evergreens (not treated in early-to-mid June) are being injured by bagworms in the southern and central sections. The leaves turn brown and large numbers of worms in their protected cone-shaped brown bags (about 1/2-inch long) can be found clinging to the leaves and branches. Sprays of carbaryl, malathion, diazinon, or lead arsenate are effective. Follow directions on the label, and check plants that may be injured if sprayed with the insecticide you are using. Malathion would be the preferred insecticide if mites are also present. To check for mites, hold a piece of white paper beneath a branch and jar the branch. The mites appear as small, black, moving specks on the paper.

Ants, spiders, crickets, millipedes, sowbugs, roaches, and other crawling insects continue to enter homes. If you sprayed the foundation wall of your house in May, it may need another treatment now.

Buy chlordane as a liquid emulsion concentrate and dilute it with water to the proper strength (1 pint of 45-percent chlordane liquid concentrate in 3 gallons of water gives a 2-percent solution). Spray the foundation from the sill to the soil until the spray runs off. Also, spray 2 to 3 inches of soil next to the foundation wall. Spray in cracks or expansion joints, along porches and around steps, also along the edges of sidewalks and driveways. In houses with crawl spaces, treat the inside of the foundation wall, as well as the outside, and spray support pillars. The average house requires about 3 gallons of finished spray. Do not spray near wells or cisterns. Do not spray shrubbery or flowers, because the oil may burn the foliage. Repeat the treatment in late summer for protection in the fall.

If you have noticed a sticky substance on the leaves of trees, shrubs, or flowers, chances are that aphids are present. Cars parked beneath infested trees become covered with these sticky spots. These small, green, black or red, soft-bodied sucking insects secrete a sticky substance called "honeydew." White specks are usually visible on the leaves; these are the cast-off skins of the aphids. Ants are often attracted to the sugary material, and an abundance of ants on plants may indicate aphids. The leaves of heavily infested plants will curl, yellow, and turn brown. Damage is accentuated when soil moisture is low. For control, spray foliage thoroughly, using 2 teaspoons of 50- to 57-percent malathion or 25-percent diazinon emulsion concentrate per gallon of water. Do not use malathion on African violets or cannaert red cedar. Do not use diazinon on ferns or hibiscus.

Tomato hornworms and tomato fruitworms (corn earworm) are attacking tomatoes in the southern half of the state. Spray with carbaryl (Sevin), using 2 tablespoons of 50-percent wettable powder per gallon of water. Repeat the treatment every week if worms persist. There is no waiting period between treatment and harvest.

Mosquito populations continue to be high in many areas. This is fast becoming a record year for this insect, probably as a result of the wet weather during May and June.

To reduce the number of mosquitoes, follow these steps: (1) Eliminate standing water in such places as eave troughs, old tires, tin cans, childrens' toys, storm sewers, etc. (2) Apply a water-base spray containing 1-percent malathion (2 ounces of 50- to 57-percent liquid emulsion concentrate per gallon of water) to shrubbery and tall grass. Repeat the treatment every week or two if needed. (3) Keep the screens on doors and windows in good repair. (4) Hang plastic resin strips (2" x 10") containing 20-percent dichlorvos (DDVP)--one strip per 1,000 cubic feet of space, or about one per room. These strips will kill mosquitoes and flies for 4 to 6 weeks. As an added precaution, hang the strips where children can't reach them and away from fish bowls and food counters. A 0.1-percent pyrethrin space spray--applied from a pressurized spray can--can be used for quick knockdown in place of the dichlorvos resin strips. Frequent treatments will be needed during problem periods. (5) When entering mosquito-infested areas, use a repellent. One of the most effective mosquito repellents is DEET (diethyltoluamide). (6) For quick knockdown at cookouts, outdoor parties, or picnics, use either 0.1-percent pyrethrin or 0.5-to-1 percent dichlorvos (DDVP) as an oil- or water-base space spray. Spray the mist lightly beneath tables and chairs and into the air for a few feet around the area. Repeat the treatment as needed.

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INSECT SURVEY BULLETIN

College of Agriculture
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State / County / Local Groups / U. S. Department of Agriculture Cooperating

FOR IMMEDIATE RELEASE July 14, 1967

INSECT SURVEY BULLETIN NO. 14

This series of weekly bulletins provides a general look at the insect situation (fruit insects excepted), along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions.

Corn Insects

Corn leaf aphid populations continued to increase this week. A few fields in the southern half of the state warrant treatment. In the northern half of the state, a few aphids can be found in most fields. In the western and northern sections, individual aphids and sometimes a colony were present in from 5 to 30 percent of the plants in fields with tassels just beginning to show.

Swollen brown-colored aphids, parasitized by a tiny wasp, were observed this week. Lady beetles, syrphid flies, aphis lions, and other predators also eat aphids. If many aphids appear parasitized or if predatory insects are abundant, it may not be wise to apply an insecticide.

Leaf-aphid infestations usually begin when the tassel is deep in the whorl, reaching their peak between tassel emergence and the end of pollen shed. Infestations decline rapidly after pollen shed, except for occasional fields where populations remain high until harvest.

Treatment is justified on late-whorl-stage corn (a few tassels showing), if 50 percent or more of the plants have some aphids (a few heavy) and if the corn is under stress (from low soil moisture, fertility, disease, etc.). Continue to watch the infestation as long as growing conditions are good; if 15 percent or more of the plants become heavily loaded with aphids, treat immediately. Seed fields should be treated if 50 percent or more of the plants have some aphids (only a few heavy), even if the corn is not under stress. In general, applications after all the silks have dried are disappointing.

Spray treatments by ground or air with 1 pound of malathion or diazinon per acre will control the aphids. When using malathion, allow 5 days between treatment and harvest for grain, ensilage, or stover. There is no waiting period between treatment and harvest for grain when using diazinon, but allow 10 days to elapse before making ensilage or stover. If corn is still in the late-whorl stage, seed producers may prefer to use 1 pound of either diazinon or phorate (Thimet) as granules per acre. To avoid potential hazards to detasselers, use phorate only on male-sterile corn.

It would be useless to apply insecticides now for the control of first-generation corn borer, even in the northern sections. Some second-generation corn borer moths are emerging in the southern sections; pupation is just beginning in the northern sections. We can expect a third generation in southern sections, but only two generations in the remainder of the state.

Peak egg laying will probably occur the week of July 23 in southern sections, the first week of August in central sections, and the second week of August in northern sections. Moth emergence will probably extend over a longer period than for the first generation, and we could have a prolonged egg-laying period (3 to 4 weeks).

Damage from second-generation corn borers could be severe, and the moths will tend to concentrate their egg laying in fields in the late-whorl to early-silk stage. The moths will migrate readily from field to field.

Carbaryl (Sevin) or diazinon as granules or sprays are effective against second-generation corn borers. Apply at first hatch if there is an average of one or more egg masses per plant.

Northern corn rootworm larvae can still be found feeding on corn roots. They are from 1 to 2 weeks behind in their development, compared to last year. About 10 percent of the larvae have pupated in central sections; pupation is just beginning in northern sections. A few adult beetles should appear about 10 days from now. Adult western corn rootworms should appear at about this same time in the limited area of infestation in the western section. Reports of rootworm damage to corn treated with aldrin or heptachlor continue to filter in. Last year approximately 10 percent of the cornfields in the northern half of the state had resistant beetles. The resistance problem is obviously increasing again this year.

It is now too late to apply control measures for the larvae. Control of adult beetles that feed on silk may be needed to prevent injury to pollination in early to mid-August.

Armyworms are present in small numbers in occasional fields of grassy corn in northern sections. If needed, carbaryl (Sevin) at 1 1/2 pounds per acre as a spray will give adequate control. Toxaphene at 1 1/2 pounds per acre can also be used--but only on corn grown for grain, not on ensilage corn.

Corn blotch leaf miners were reported heavy, especially on the lower leaves, in one field this week. The insect is common in many fields, but the mines seldom cover a large portion of the leaf; only a few leaves per plant are involved. The green-to-white nearly transparent maggot (1/4-inch long) tunnels between the leaf tissues, leaving transparent galleries that appear as white-to-gray blotches. The damage done by this insect is believed to be of little economic importance. No effective control is known.

Wooly bears and cattail caterpillars (brown, orange-striped and bristly) are present in cornfields. The wooly bears like to feed on silks, the cattail caterpillar on leaves. Insecticide control has seldom been needed for these insects.

Soybean Insects

Green cloverworms and cabbage loopers are feeding on soybeans in the southern sections. Damage is not apparent as yet, but the situation bears watching.

Leafhoppers are still abundant in soybeans. These small, green, "gnat-like" insects are the same leafhoppers that attack alfalfa. When severe, they cause leaves to yellow and brown (die back from tip). The term "hopper burn" is used to describe their injury to potatoes. If needed, a spray containing 1 pound of malathion per acre for soybeans will control this insect.

Forage Insects

The yellowing of alfalfa from potato leafhopper feeding is becoming more evident. These small, green, wedge-shaped insects (1/16-inch) cause yellowing, purpling, and stunting of alfalfa, and reduce both the quantity and quality of the hay. If swarms of these leafhoppers are observed at cutting time, treatment of the new growth is indicated. Severely damaged fields will not recover from a spray treatment alone. Thus, clip and remove; then spray the new growth. Spray when the new growth is 2 to 6 inches tall with either 1 pound per acre of actual carbaryl (Sevin) or methoxychlor. Allow 7 days to elapse between treatment and harvest when using methoxychlor. There is no waiting period for carbaryl. Carbaryl is toxic to bees and should not be applied to alfalfa in bloom.

Alfalfa weevils were found for the first time in Carroll, DuPage, Kendall, Putnam, Rock Island, Schuyler, Stark, and Whiteside counties. They have now been identified in 15 new counties this year, leaving only 4 counties in the northwestern section (JoDaviess, Stephenson, Winnebago, and Ogle) where they have not yet been seen. Economic damage can be expected next year in most alfalfa in the area south of a line from Watseka to Hardin. A few larvae are still present in alfalfa fields in the southern one-third of the state, probably as a result of egg laying by a few of the spring adults.

Homeowner Insect Problems

Picnic beetles are abundant in many areas. These black beetles (about 1/4-inch long with four yellow spots on their back) are attracted to the odor of food. They particularly like overripe fruit and vegetables, and will also congregate around garbage containers and on windows and door screens.

For control in home yards, pick fruits and vegetables before they become overripe. Dispose of any produce that is spoiled. Use a spray of malathion, diazinon, or carbaryl (Sevin) on and around garbage containers to kill the beetles. You can use these same insecticides on shrubbery and tall grass several hours before a cookout to help reduce the number of beetles. Follow directions on the label, and check plants that may be injured if sprayed with the insecticide you are using. A pressurized spray can containing 0.1-percent pyrethrin or 0.5-percent dichlorvos (DDVP) is handy for quick knockdown of beetles that suddenly move into the area.

Mimosa webworms attack the leaves of honey locust and mimosa. They are small, gray-to-brown, striped, active caterpillars that use a silken thread to tie a bunch of leaflets together. They skeletonize these leaflets and then form a new nest. The old nest turns brown and the leaflets die. Spray the infested trees with malathion, using 2 teaspoons of the 50- to 57-percent emulsion concentrate per gallon of water. (This is one quart in 100 gallons of water.)

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CAUTION: BEFORE APPLYING INSECTICIDES, READ THE LABELS CAREFULLY AND FOLLOW ALL PRECAUTIONS. THIS WILL NOT ONLY INSURE PERSONAL SAFETY, BUT WILL ALSO PREVENT RESIDUE HAZARDS.

This weekly report was prepared by H. B. Petty, Steve Moore, Roscoe Randell, and Don Kuhlman, University of Illinois College of Agriculture and Illinois Natural History Survey, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch, from information gathered by entomologists and cooperators who send in weekly reports from their own localities.

INSECT SURVEY BULLETIN

College of Agriculture
University of Illinois
and Natural History Survey, Urbana, Illinois

State / County / Local Groups / U. S. Department of Agriculture Cooperating

FOR IMMEDIATE RELEASE July 21, 1967

INSECT SURVEY BULLETIN NO. 15

This series of weekly bulletins provides a general look at the insect situation (fruit insects excepted), along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions.

Corn Insects

Corn leaf aphid populations did not increase greatly this week. In the west-southwest section, populations were decreasing in fields that were in the pollinating stage. In other areas, populations remained low. Insidious flower bugs (resembling a miniature chinch bug) are very abundant in the whorls and tassels of corn this week; this predator and others like syrphid fly maggots, parasitic wasps, lady beetles, and aphis lions are helping to hold aphids in check.

Early treatment of aphids is best. Check corn that is in the late-whorl to pollinating stage; if 15 percent or more of the plants are heavily loaded with aphids, treat immediately. After pollen shed, aphid populations usually decline; much of their damage has already been done. Unless the corn is under stress from low moisture, fertility, etc., treatments after pollen shed are disappointing.

Spray treatments by ground or air with 1 pound of malathion or diazinon per acre will control the aphids. When using malathion, allow 5 days between treatment and harvest for grain, ensilage, or stover. There is no waiting period between treatment and harvest for grain when using diazinon, but allow 10 days to elapse before making ensilage or stover. If corn is still in the late-whorl stage, seed producers may prefer to use 1 pound per acre of either diazinon or phorate (Thimet) as granules. To avoid potential hazards to detasselers, use phorate only on male-sterile corn.

Western corn rootworm adults began emerging this week in the limited area of infestation in the western section. Northern corn rootworm adults are beginning to emerge in northern and central sections. About 50 percent of them have now reached the pupal (resting) stage. These green beetles can be found in corn in southern sections, but they become more abundant as you go northward. They are most often found in fields where corn has been grown consecutively for 3 or more years.

Southern corn rootworm adults are abundant in many cornfields, particularly in the southern half of the state. A few fields were damaged by the larvae of the southern corn rootworm feeding on the roots and boring into the underground portion of the stem. The adults feed on silks and, if abundant during silking, will reduce kernel set.

Resistance by southern corn rootworms to chlorinated hydrocarbon insecticides like aldrin and heptachlor is common in the southern states, where these beetles originate each spring. It is not surprising that failures with aldrin and heptachlor against this insect occurred this year.

Reports of rootworm (northern, southern, and western) damage due to a resistance problem continue to filter in. If you used a phosphate or carbamate insecticide at planting time or as a basal treatment at or near layby time, do not expect a 100-percent kill of rootworms. Basal treatments are giving better results than planting-time treatments. About 70-percent control is considered average. In fields of high rootworm populations (40 to 150 larvae per hill), it would not be unusual to find 10 to 40 larvae per hill surviving after treatment. Damage would be apparent in these fields, and it would be impossible to assess the effect of the treatment without an untreated strip for comparison. Conceivably, heavy rainfall could result in failures with these insecticides, since they break down (hydrolyze) more readily when in contact with water. Some areas received heavier-than-normal rainfall in late May and June. It is now too late to attempt to control the larvae, but adult beetles can still cause further damage.

Adult beetle populations will be at their peak in early- to mid-August, feeding on fresh silks. These beetles can interfere with pollination when they are numerous. If a field averages 5 or more adult beetles per ear during silking, treatment is justified. For optimum results, the field should be at least 25 percent and not over 75 percent silked at the time of spraying. Treatments applied after 90 percent of the plants had silked were not worthwhile. Sprays of carbaryl (Sevin), diazinon, or malathion at 1 pound of actual chemical per acre are effective. Use diazinon if aphids or corn borer are also present, since it is effective against all 3 insects. When using malathion, allow 5 days between treatment and harvest for grain, ensilage, or stover--10 days for diazinon. There is no waiting period for carbaryl.

Second generation European corn borer moths are emerging in the southern third of the state. Egg laying is progressing rapidly south of a line from Harrisburg to Carbondale.

In south-central Illinois, moth emergence is just beginning, and pupation is about 40 percent complete. In central Illinois, pupation ranges from 10 to 20 percent, while pupation is just beginning in northern Illinois. Lower-than-average temperatures have delayed borer development. Moth emergence and egg laying will extend over a 3- to 4-week period in most sections of the state.

In the southern section, begin checking fields late this week, in the central sections about August 5, and in northern sections about August 12 for the presence of egg masses. The fields most likely to receive the most eggs will be those in the late-whorl to early-silk stage of development.

Apply treatments at first egg hatch, if there is an average of 1 or more egg masses per plant. Carbaryl (Sevin) or diazinon as granules or sprays are effective against second-generation corn borers.

Wooly bear caterpillars are feeding on silks in some fields. They snip off the silks similar to a scissors cut. They seldom become numerous enough to cause serious damage, but one report of severe damage has been received. Carbaryl (at 1 1/2 pounds per acre) as a spray directed at the ear zone should control the insect.

Soybean Insects

Leafhoppers are still abundant in soybeans. If needed, a spray containing 1 pound of malathion per acre for soybeans will control this insect. Do not harvest as forage for 1 day after treatment.

Green worms were observed feeding in soybeans this week. These may be green cloverworms, cabbage loopers, alfalfa webworms, or alfalfa caterpillar larvae. Damage is not apparent thus far and no control is needed.

Forage Insects

The yellowing of alfalfa from potato leafhopper feeding was evident this week in some fields. Damaged alfalfa has a yellow-to-purple cast and is stunted. After damage is apparent, cutting is the only answer, since the damaged growth will not recuperate.

If leafhoppers are numerous in the new growth, spray when the new growth is 2 to 6 inches tall with 1 pound per acre of actual carbaryl (Sevin) or methoxychlor. Allow 7 days to elapse between treatment and harvest when using methoxychlor; there is no waiting period for carbaryl.

Livestock Insects

Pastured cattle were being bothered noticeably by flies this week. Stable flies that feed on the legs and undersides of animals accounted for most of the irritation. In the northern two-thirds of the state, face fly populations are increasing, but they are not yet damaging. Herds averaging 2 to 5 face flies per animal were observed this week. A small number of horn flies were also present on pastured cattle. The blood-sucking stable flies and horn flies along with the annoying face flies can drastically lower profits by reducing milk production and weight gains.

For pastured dairy cattle, apply 1 to 2 ounces of an oil-base spray of 2 percent Ciodrin per animal; do this every 3 to 4 days for best results. A 1-percent dichlorvos (DDVP) or 0.1-percent pyrethrin oil-base spray applied at the rate of 1 or 2 ounces per animal every day or two can also be used. But these are less effective than Ciodrin, particularly against the face fly. Water-base sprays of the same material may be used, but control is less effective. Pay particular attention to the animal's legs and undersides when spraying.

For pastured beef cattle, apply a water-base spray of 0.5-percent toxaphene, using 1 to 2 quarts per animal every 3 weeks. This treatment does not control face flies. Allow 28 days to elapse between treatment and slaughter with toxaphene. If the situation permits its use, a 2-percent Ciodrin oil-base spray--applied at the rate of 1 to 2 ounces per animal every 3 to 4 days from an automatic sprayer--is an excellent way to control the pasture fly complex on beef cattle.

Homeowner Insect Problems

Fleas are causing problems to returning vacationers. The family dog or cat is either taken along or boarded out during the vacation period. Flea larvae present in the house develop into hungry adults, spreading throughout the house in search of a warm-blooded animal to feed on.

Dogs and cats serve as a walking lunch counter for fleas; so always dust them once a month during warm periods (May to October) with either 4-percent malathion or 5-percent carbaryl (Sevin). Apply the dust treatment once or twice during the cooler period (November to April) as a further protection. This will usually prevent fleas from becoming a problem.

In cases of severe infestations in homes, spray lightly over rugs, upholstered furniture, and other infested areas with 0.1-percent pyrethrum from a pressurized spray can. This will give a quick kill of adult fleas. Repeated treatments may be needed, since the spray only lasts a few hours at best. Apply the same dust material used on the dog or cat to their bedding or basket. If a problem occurs outdoors, spray the infested area (usually tall grass and shrubbery beds) with malathion, using 2 ounces of the 50- to 57-percent emulsion concentrate per gallon of water.

Sod webworm moths are emerging and laying eggs in southern Illinois. Egg laying by these second-generation moths will begin during the last week of July and the first week of August in the central section.

Large numbers of buff-colored moths flying in a zigzag pattern just above the grass at dusk around shrubs and outside lights means that the caution sign is out. Apply chemical treatments about 2 weeks after a heavy moth flight.

Damage may occur in lawns that have been kept green by constant watering; moths tend to concentrate their egg laying in such lawns. However, a lawn in poor condition will be more seriously affected by an equal number of webworms. Sod webworm larvae clip the blades of grass just above the sod. Brown spots appear in the turf where larvae are numerous.

To control webworms, apply 2 pounds of actual carbaryl (Sevin), 1 pound of diazinon, or 1 1/4 pounds of trichlorfon (Dylox) as a spray per 10,000 square feet. Use this amount in 25 to 50 gallons of water to distribute the insecticide. Do not water the lawn for 3 days after treatment.

Oystershell scale is in the egg stage in central Illinois. Sprays applied now are ineffective. Treatment for second-generation crawlers is likely to be needed in mid-August.

Bagworms are nearly fullgrown, and treatments should be applied now if damage is being done. Poor control is obtained as the bagworms approach maturity.

Aphids are abundant on some rose bushes. These are small, green, soft-bodied, sucking insects that congregate on stems and leaves. If the insects are numerous and control is necessary, spray the foliage with malathion (2 teaspoons of 50- to 57-percent emulsion concentrate per gallon of water) or diazinon (2 teaspoons of 25-percent emulsion concentrate per gallon of water).

Leafhoppers are present on marigolds and are causing "hopper burn." If control is necessary, apply carbaryl (Sevin) or malathion as a dust or spray.

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This weekly report was prepared by H. B. Petty, Steve Moore, Roscoe Randell, and Don Kuhlman, University of Illinois College of Agriculture and Illinois Natural History Survey, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch, from information gathered by entomologists and cooperators who send in weekly reports from their own localities.

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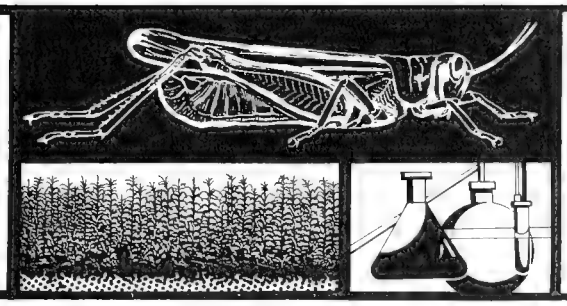

INSECT SURVEY BULLETIN

College of Agriculture
University of Illinois
and Natural History Survey, Urbana, Illinois

State / County / Local Groups / U. S. Department of Agriculture Cooperating

FOR IMMEDIATE RELEASE July 28, 1967

INSECT SURVEY BULLETIN NO. 16

This series of weekly bulletins provides a general look at the insect situation (fruit insects excepted), along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions.

Corn Insects

Adult rootworms are present in cornfields throughout the state. In the northern half of the state, an average high of 5 to 10 beetles per plant was observed in some fields. Populations will continue to increase as more beetles emerge. The corn in these fields has already been damaged (usually badly lodged), due to the root pruning by the larvae. The pale-green northern, 12-spotted southern, and yellow-and-black striped western corn rootworm adults all feed on silks. The western corn rootworm was found for the first time in Stark County this week. When numerous, these beetles can interfere with pollination.

If a field just now silking (25- to 75-percent silked) averages 5 or more beetles per plant, treatment will be profitable. Treatments applied much after 90 percent of the field has silked are of little benefit. Sprays of carbaryl (Sevin), diazinon, or malathion at 1 pound of actual insecticide per acre are effective. Allow 5 days between treatment and harvest for malathion, 10 days for diazinon; carbaryl has no waiting period. Control of adult beetles will reduce egg laying and will result in fewer larvae in the field next year. However, adult control is no guarantee that problems with larvae will not occur in 1968.

A word to the wise: During the next week or two, you should check your cornfields to determine if a problem with northern corn rootworms is developing. If you have grown corn for several years in succession in the field, if you have used aldrin or heptachlor almost every year, if the corn is lodged (maybe only spots), and if there are lots of pale-green beetles (5 to 10 or more per plant on the average) on the fresh silks, you most likely have resistant northern corn rootworms. Approximately 10 percent of the cornfields sampled in 1966 had resistant beetles. In the limited area of infestation (western section of Illinois) of the resistant western corn rootworm, make a count of the average number of beetles per plant when the corn is in fresh silk. An average of 5 to 10 or more adults per plant is probably enough to cause economic losses in 1968 if the field will be in corn again.

If a resistance problem is apparent in your field and the field is to be replanted with corn, plan on applying a phosphate or carbamate insecticide next year. Preliminary results in Dr. Ralph Sechriest's research plots indicate that basal treatments cultivated-in at or near lay-by time give better results than planting-time treatments.

You can also control a resistant northern corn rootworm problem by growing a crop other than corn for 2 years and following with corn for no more than 2 years.

Corn leaf aphid populations continue to remain low. South of State Highway 9, populations are declining. North of Highway 9, aphids are present but are not abundant except in a few fields. In general, fields just now tasselling are averaging between 2 and 80 percent of the plants with a few aphids; occasional plants have light to moderate numbers. Insidious flower bugs, which resemble a miniature chinch bug, are still numerous in corn and are feeding on the aphids. A few parasitized aphids can also be found. Some lady beetles, syrphid fly maggots, and aphis lions are present and are eating aphids.

No one can accurately predict whether these aphid populations will increase or decrease, but the next 2 weeks will determine the outcome. Currently, aphid populations are considerably lower than they were a year ago. Also, soil moisture is ample in most areas. Thus, aphid injury should not be as pronounced as last year.

Early treatment is best. If corn is still in the whorl stage, if 50 percent or more of the plants have some aphids (a few heavy), and if the corn is under stress, then treat immediately. Treatment is also justified in corn in the late whorl (a few tassels showing)-to-pollinating stage if 15 percent or more of the plants are heavily loaded with aphids (blackened). After pollen shed, aphid populations usually decline, and most of their damage has already been done. Treatments after pollen shed are of little value unless the corn is under severe stress.

Spray treatments by ground or air with 1 pound of malathion or diazinon per acre will control the aphids. When using malathion, allow 5 days between treatment and harvest for grain, ensilage, or stover. There is no waiting period between treatment and harvest for grain when using diazinon, but allow 10 days to elapse before making ensilage or stover. If corn is still in the late-whorl-stage, seed producers may prefer to use 1 pound per acre of either diazinon or phorate (Thimet) as granules. To avoid potential hazards to detasselers, use phorate only on male-sterile corn.

Emergence of second-generation European corn borers has reached its peak in the southern sections; the first moths emerged this week in the central section; pupation ranges from 10 to 20 percent in the northern sections. Check late-maturing fields (late whorl-to-early silk stage) now in the southern sections, after August 5 in the central section, and after August 12 in the northern sections for egg masses. Apply treatments at first egg hatch if there is an average of one or more egg masses per plant. Use 1 pound of actual diazinon, or 1 1/2 pounds of actual carbaryl (Sevin), per acre as granules or sprays. Granules--not sprays--are best if the treatment is applied by air. When using diazinon, allow 10 days before making ensilage or stover; carbaryl has no waiting period.

The general picture for second-generation corn borers is not good, neither is it devastating. Damage is expected to be greatest in the northwest and west sections. From 1 to 12 percent of the cornfields in the state will have more than 3 mature borers per plant by October 1. On the average, yield is reduced 1 percent for each second-generation borer per stalk. The loss is primarily due to broken stalks and dropped ears. The table on page 3 summarizes our predictions of the expected second-generation corn borer populations for each area, with the exception of the southwest section.

Section	First-generation population borers/100 stalks	Percentage of fields expected to have second-generation populations in the following numbers: borers/100 stalks 0-150	150-300	300-500	500+
Northwest	17	67	21	9	3
Northeast	7	79	16	4	1
West	12	75	17	6	2
Central	3	84	14	2	0
East	4	83	15	2	0
West-Southwest	5	80	16	3	1
East-Southeast	2	90	9	1	0
Southeast	2	90	9	1	0

These are predicted figures from 10-year averages; the weather, natural enemies, and the percentage of first-generation worms that develop into second-generation moths (some first-generation larvae will not pupate until next spring), could still change the picture.

Wooly bear or yellow bear caterpillars are abundant in some cornfields. These light yellow-to-white or brown, hairy caterpillars are chewing off silks, similar to a scissors cut. The silks are usually cut at the level of the ear husks. The caterpillars seldom eat completely down the silk to the ear tip, as do the root-worm adults. Silks will usually regrow and be pollinated, although pollination may not be as complete.

Most worms are an inch or more long; some are already mature (about 1 1/2 to 2 inches) and pupating. When mature, the worms spin a silken-lined cocoon covered with their body hairs. Fields just now silking are the ones to watch. In general, control is seldom of great value. If silk feeding is severe and the caterpillars are numerous, treatment may be justified. Apply 1 1/2 pounds of carbaryl (Sevin) or toxaphene per acre for control. Toxaphene should be used only if the corn is to be used for grain. Toxaphene-treated corn should not be fed as forage to dairy cattle or to livestock being fattened for slaughter. Treatments applied after the 90-percent silk stage are of little benefit.

Fall armyworms are present in some late-maturing cornfields. These brown to dull-green smooth-skinned worms feed in the whorl, giving plants a ragged appearance as the leaves emerge. Before applying control measures, be sure the worms are still present and that most of them are not more than an inch long. When they reach about 1 1/4 inches, they are about mature; at that size, they stop feeding, drop to the ground, enter the soil, and pupate. For control, apply either 1 1/2 pounds per acre of actual carbaryl or toxaphene as granules. Toxaphene granules should be used only if the corn is to be used as grain; it should not be used on ensilage corn.

Armyworms can be found in grassy areas in northern sections. As many as 4 to 20 armyworms per square foot were reported from one area this week. The worms are still small; damage is not yet apparent. Grassy cornfields should be watched for the presence of this insect. If needed, carbaryl (Sevin) at 1 1/2 pounds of actual insecticide per acre, as a spray, will give adequate control. Toxaphene at 1 1/2 pounds actual per acre can also be used--but only on corn grown for grain, not on ensilage corn.

Forage Insects

Grasshoppers are abundant in some roadsides, ditchbanks, fence rows, grass waterways, and hay fields. Do not confuse them with green katydids or long-horned grasshoppers with the long antennae (longer than their body), which are also abundant. Katydids are not of economic importance. Carbaryl (Sevin) at 3/4 pound per acre is best for the control of grasshoppers. Other insecticides like toxaphene, diazinon, malathion, and naled can be used against grasshoppers. Be sure to read the label and follow the directions and precautions for the insecticide you use.

Homeowner Insect Problems

Fall webworms are defoliating certain shade trees and shrubs. These pale-green or yellow worms with a dark stripe down the back and a yellow stripe along each side spin a web over the branches and skeletonize the leaves inside. They continue to extend the web to take in fresh foliage. Small trees and shrubs may be completely webbed over by the time the caterpillars mature. The damaged leaves turn brown, curl, dry up, and eventually die.

A spray containing 2 tablespoons of 50-percent carbaryl (Sevin) wettable powder per gallon of water is effective.

Aphids are heavy on many kinds of trees, shrubs, and flowers. These small (green, black, yellow, or red) soft-bodied sucking insects secrete a sticky material called "honeydew." Ants are often numerous on the plants along with aphids, since they feed on the aphid "honeydew." Leaves of heavily infested plants will curl, yellow, and eventually brown. Damage is enhanced by dry weather. For control, spray the foliage thoroughly, using 2 teaspoons of 50- to 57-percent malathion or a 25-percent diazinon emulsion concentrate per gallon of water. Do not use malathion on African violets or cannaert red cedar. Do not use diazinon on ferns or hibiscus.

Sod webworm moths are abundant in lawns, shrubbery, and around lights at night in the central section. These buff-colored moths (they hold their wings tightly against their sides when at rest) are laying eggs in grasses. If you notice large numbers of these moths in your yard, plan on treating your lawn with an insecticide about 2 weeks later.

The larvae of the webworm are a gray worm with small brown spots over their back and a black head. They are about an inch long when mature, and live for about 4 weeks as a larva. The worms live in silken-lined burrows in the thatch of the lawn, clipping off the grass blades at the base. Brown spots appear in the lawn when worms are numerous, and large numbers of robins will move in to feed on the larvae. By this time, it is usually too late to control the problem.

To control sod webworms, apply as a spray: (1) 2 pounds of actual carbaryl (Sevin), (2) 1 pound of diazinon, or (3) 1 1/4 pounds of trichlorfon (Dylox) per 10,000 square feet (1/4 acre). Apply the amount of insecticide suggested in at least 25 gallons of water, and do not water the lawn for 3 days after treatment. Granular forms of the same insecticides applied from a fertilizer spreader can be used in place of the spray.

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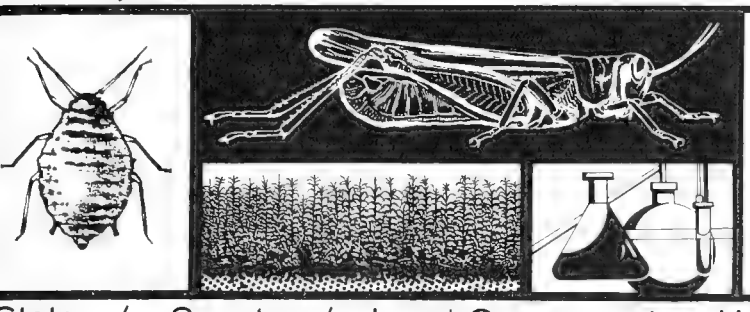
This weekly report was prepared by H. B. Petty, Steve Moore, Roscoe Randell, and Don Kuhlman, University of Illinois College of Agriculture and Illinois Natural History Survey, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch, from information gathered by entomologists and cooperators who send in weekly reports from their own localities.



INSECT SURVEY BULLETIN
College of Agriculture
University of Illinois
and Natural History Survey, Urbana, Illinois

State / County / Local Groups / U. S. Department of Agriculture Cooperating

FOR IMMEDIATE RELEASE August 4, 1967

INSECT SURVEY BULLETIN NO. 17

This series of weekly bulletins provides a general look at the insect situation (fruit insects excepted) along with suggested abbreviated control measures. Each individual should check his own fields to determine local conditions.

Corn Insects

Adult corn rootworms are feeding on silks in many cornfields throughout the state. Many fields in northern Illinois have an average of 5 or more beetles per plant. But, there are more to come. There are many fields in this area with a third of the rootworms yet to emerge as adults during the next two weeks. One field averaged 6 to 8 beetles per plant with an infestation of 50 to 55 rootworms per plant still in the soil. The western corn rootworm was found for the first time this week in Winnebago and Jo Daviess counties.

In late-planted fields of corn where silking averages 25 to 75 percent and there are 5 or more rootworm beetles per plant, treatment will be profitable. Treatments after 90-percent silk are of little benefit. Throughout the state most cornfields are beyond 90-percent silk and pollination has taken place. These fields will not be affected from silk feeding by the beetles.

Sprays of carbaryl (Sevin), diazinon, or malathion at 1 pound of actual insecticide per acre are effective. Allow 5 days between treatment and harvest for malathion, 10 days for diazinon; carbaryl has no waiting period. Control of adult beetles will reduce egg laying and will result in fewer larvae in the field next year. However, adult control is no guarantee that problems with larvae will not occur in 1968.

During the next week or two, you should check your cornfields to determine if a problem with northern corn rootworms is developing. If you have grown corn for several years in succession in the field, if you have used aldrin or heptachlor almost every year, if the corn is lodged (maybe only spots), and if there are lots of pale-green beetles (5 to 10 or more per plant on the average) on the fresh silks, you most likely have resistant northern corn rootworms.

In the limited area of infestation (western section of Illinois) of the resistant western corn rootworm, make a count of the average number of beetles per plant when the corn is in fresh silk. An average of 5 to 10 or more adults per plant is probably enough to cause economic losses in 1968 if the field will be in corn again.

Second-generation European corn borer pupation is more than 50 percent complete in northern Illinois with peak moth emergence and egg laying occurring this coming week in that section of the state. Egg laying should be at its peak in the western section of the state. Damage by corn borers is expected in many fields in both the northwest and west sections of the state. Treatments for second-generation corn borer should be applied at first egg hatch, if there is an average of one or more egg masses per plant. Use 1 pound of actual diazinon or 1 1/2 pounds of actual carbaryl (Sevin) per acre as granules or sprays. Granules are best if treatment is applied by air. When using diazinon, allow 10 days before making ensilage or stover; carbaryl has no waiting period.

Corn leaf aphid numbers are declining in most areas of the state, especially in fields where tassels have emerged and pollen shed is complete. Aphids can be found in occasional late-planted fields where a few tassels are emerging.

Treatment is justified for corn in the whorl stage if 50 percent or more of the plants have some aphids with a few tassels severely infested. Treatment in the early tassel to pollinating stage is justified if 15 percent or more of the plants are heavily loaded with aphids.

Armyworms are present in some grassy areas in fields in northern Illinois. These worms are over half-grown, and as many as 40 per square foot were found in a grassy area. Late oat fields and grassy cornfields in the northern section should be watched for armyworms during the next week. If needed, carbaryl (Sevin) at 1 1/2 pounds of actual insecticide per acre, as a spray, will give control. Toxaphene at 1 1/2 pounds actual per acre can also be used on corn grown for grain and not ensilage.

Simyra henrici, an orange and brown spiny caterpillar, is present in some cornfields. It feeds on the leaves of corn. Another caterpillar, the wooly bear caterpillar, is still present in varying numbers in many cornfields. It feeds on fresh silks and may reduce kernel set. Treatment may be justified in late-planted corn with less than 90 percent silk where there is severe feeding on the silks. If caterpillars are numerous, treatment may be justified. Apply 1 1/2 pounds of carbaryl (Sevin) or toxaphene per acre for control. Toxaphene should be used only if corn is to be used for grain.

Homeowner Insect Problems

White grubs can be prevented in new-seeded lawns by treating the soil with chlordane before seeding. Apply 20 ounces of actual chlordane per 10,000 square feet of lawn area and mix into the soil. This treatment will protect against grubs for five years.

Sod webworm larvae could be present in some lawns this week. These larvae are gray with small brown spots over their body and have a black head. The worms live in silken-lined burrows in the thatch of the lawn and clip off grass blades at the base of the plant.

To control sod webworms, apply as a spray: (a) 2 pounds of actual carbaryl (Sevin), (b) 1 pound of diazinon, or (c) 1 1/4 pounds of trichlorfon (Dylox) per 10,000 square feet (1/4 acre). Apply the amount of insecticide suggested in at least 25 gallons of water, and do not water the lawn for 3 days after treatment. Granular forms of the same insecticides applied from a fertilizer spreader can be used in place of the spray.

Crickets around the house foundation attempting to enter the home can be controlled by a foundation spray of chlordane. Buy chlordane as a liquid emulsion concentrate and dilute it with water to the proper strength (1 pint of 45-percent chlordane liquid concentrate in 3 gallons of water gives a 2-percent solution). Spray the foundation from the sill to the soil until the spray runs off. Also spray 2 to 3 inches of soil next to the foundation wall. Spray cracks or expansion joints along porches and around steps and also along the edges of sidewalks and driveways. In houses with crawl spaces, treat the inside of the foundation wall as well as the outside, and also spray support pillars. The average house requires about 3 gallons of finished spray. Do not spray near wells or cisterns. Do not spray shrubbery or flowers, because the oil may burn the foliage. This treatment will also be effective against ants and centipedes trying to invade homes in search of food or shelter.

Flies on pastured cattle are increasing in number and are causing noticeable discomfort to the animals. In northern Illinois fly counts averaged 5 to 10 face flies plus 50 to 100 horn flies per animal.

For pastured dairy cattle, apply 1 to 2 ounces of an oil-base spray of 2 percent Ciodrin per animal every 3 to 4 days for best results. A 1-percent dichlorvos (DDVP) or 0.1-percent pyrethrin oil-base spray applied at the rate of 1 or 2 ounces per animal every day or two can also be used. But these are less effective than Ciodrin, particularly against the face fly. Water-base sprays of the same material may be used, but control is less effective. Pay particular attention to the animal's legs and undersides when spraying.

For pastured beef cattle, apply a water-base spray or 0.5 percent toxaphene, using 1 to 2 quarts per animal every 3 weeks. Allow 28 days to elapse between treatment and slaughter. Back rubbers, compared with spraying, are only partially effective against horn flies and stable flies. A 2-percent Ciodrin oil-base spray--applied at the rate of 1 to 2 ounces per animal every 3 to 4 days from an automatic sprayer--is an excellent way to control flies on pastured beef cattle, if the situation permits its use.

CAUTION: BEFORE APPLYING INSECTICIDES, READ THE LABELS CAREFULLY AND FOLLOW ALL PRECAUTIONS. THIS WILL NOT ONLY INSURE PERSONAL SAFETY, BUT WILL ALSO PREVENT RESIDUE HAZARDS.

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This weekly report was prepared by H. B. Petty, Steve Moore, Roscoe Randell, and Don Kuhlman, Illinois Natural History Survey and University of Illinois College of Agriculture, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch, from information gathered by entomologists and cooperators who send in weekly reports from their own localities.

INSECT SURVEY BULLETIN

College of Agriculture
University of Illinois
and Natural History Survey, Urbana, Illinois

State / County / Local Groups / U. S. Department of Agriculture Cooperating

FOR IMMEDIATE RELEASE August 11, 1967

INSECT SURVEY BULLETIN NO. 18

This series of weekly bulletins provides a general look at the insect situation (fruit insects excepted) along with suggested abbreviated control measures. Each individual should check his own fields to determine local conditions.

Corn Insects

Corn rootworm beetles are gradually increasing in abundance in cornfields, where they are concentrating in the corn silks. In most fields, pollination has been completed and silk feeding is not important. We observed a few heavily infested fields (20 or more beetles per plant) where the adults were feeding on and damaging ear tips. Treatment of these fields is justified. Treatment with insecticides in the majority of fields at this time will not be profitable, except in late fields, where pollination may still be affected by silk feeding.

Treating adults now with the hope of reducing numbers of larvae in the same field next year offers little promise. We do not suggest controlling adult rootworms after the field has completed pollination. Migration of adult beetles from adjacent fields and prolonged emergence make late summer insecticide applications less effective.

In late-planted fields of corn, where silking averages 25 to 75 percent and there are 5 or more rootworm beetles per plant, treatment will be profitable. (Note: Do not confuse the tan- to green-colored northern corn rootworm adults with the small, wingless, soft-bodied green tarnished plant bug nymphs.)

Sprays of carbaryl (Sevin), diazinon, or malathion at 1 pound of actual insecticide per acre are effective. Allow 5 days between treatment and harvest for malathion, 10 days for diazinon; carbaryl has no waiting period.

Western corn rootworm adults were found this week for the first time in Stephenson, Fulton, and McDonough counties.

Second-generation European corn borer moth emergence and egg laying are progressing in northwestern and western Illinois. Heavy moth flights were observed in both sections this week. Moths will continue to emerge and lay eggs for at least three weeks. Half-grown second-generation larvae and egg masses were observed in some fields in central sections. The heavy rains in some localities may have destroyed egg masses and killed many moths.

Although moths will deposit eggs on all corn, they concentrate their egg laying in fields in the late whorl to early silk stage. Second-brood moths generally lay their eggs in clusters of 15 to 20 near the mid-rib on the undersides of leaves

in the vicinity of the ear zone. Occasionally the eggs are laid on the upper sides of the leaves. Egg masses are white when first laid and about 1/4 inch in diameter.

To decide whether to apply an insecticide, count the egg masses on several plants in several locations in the field. Observe each leaf closely. If the average is one or more egg masses per plant, treatment may be profitable to prevent extensive stalk breakage and ear dropping. Use 1 pound of actual diazinon or 1 1/2 pounds of actual carbaryl (Sevin) per acre as granules or sprays. When using diazinon, allow 10 days before making ensilage or stover; carbaryl has no waiting period.

Corn leaf aphids are rapidly declining in population or have completely disappeared in fields where pollen shed is complete and silks are drying. In a few fields, the aphids are not disappearing but are dropping down from the tassels and colonizing on the silks and lower leaves. Late-planted fields where a few tassels are beginning to emerge should be checked for an infestation.

Treatment is justified for corn in the whorl stage if 50 percent or more of the plants have some aphids with a few tassels severely infested. Treatment in the early tassel to pollinating stage is justified if 15 percent or more of the plants are heavily loaded with aphids.

Several different caterpillars have been observed feeding in corn silks and on ear tips. These include fall armyworms, true armyworms, corn earworms, corn borers, and loopers. Damage is not apparent.

Fall armyworms are present in an occasional late-maturing cornfield. The dull-green to brown smooth-skinned worms feed in the whorl of the plant, causing a ragged appearance. In many fields the larvae have already matured and left the plants. Be sure the worms are still present before applying control measures. Carbaryl or diazinon granules should control worms in the whorl. For diazinon, allow 10 days between application and harvest as ensilage or stover. There is no waiting period for carbaryl. Toxaphene granules can be used if the corn is to be used only as grain.

Soybean Insects

Heavy grasshopper populations were noted in some areas in fence rows, ditch banks, and roadsides. They will continue feeding in these areas until the food supply is exhausted and then migrate into adjacent corn and soybean fields. If 'hoppers are numerous, spray immediately before they have a chance to migrate to corn or soybeans.

Carbaryl (Sevin) at 3/4 pound per acre as a spray is best for grasshoppers. Diazinon at 1/2 pound, malathion at 1 pound, and naled (Dibrom) at 3/4 pound per acre are also effective. When treating forage crops, allow 7 days between treatment and harvest with diazinon, 4 days with naled. There is no waiting period for carbaryl or malathion.

Green cloverworms are present in soybean fields in southern, central, and northern sections. Numbers are still low, but the situation deserves careful attention. These pale-green worms with white stripes will defoliate the plants. They "spring" or jump by rapidly curling and uncurling their bodies.

As a rule of thumb, the minimum average population requiring control is 6 per linear foot of row. To determine the field average, shake the plants over the center of the row and count the worms in several places in the field.

Use 1 1/2 pounds of toxaphene per acre or 1 pound of carbaryl (Sevin) per acre to control these pests. When using toxaphene, do not feed treated forage to dairy animals or livestock fattening for slaughter.

Leafhoppers are still abundant in soybeans. These small, green gnatlike insects are the same leafhoppers that attack alfalfa. When attack is severe, they cause leaves to yellow and brown (die back from tip). If needed, a spray containing 1 pound of malathion per acre for soybeans will control this insect.

Homeowner Insect Problems

Fall webworm caterpillars were observed defoliating apple, birch, and shade trees this week. These pale-green or yellow worms with a dark stripe down their backs extend a webbing over the branches and strip the leaves inside as they grow. They skeletonize the leaves, which then curl and dry up. Small trees and shrubs may be completely webbed over by the time the caterpillars mature. Carbaryl applied as a spray is effective. To mix, use 2 tablespoons of 50-percent wettable powder per gallon of water.

Leafhoppers are abundant around street lights and house lights. These wedge-shaped insects may appear in swarms at night. A space spray of pyrethrins or dichlorvos (DDVP) applied from a pressurized spray can will provide a quick knock-down and temporary relief. For control on lawns, apply carbaryl as a spray or granule. Use 2 tablespoons of Sevin (50-percent wettable powder) per gallon of water, or 1 1/4 pounds of actual carbaryl per 5,000 square feet.

Millipedes can be a problem at this time of year. These many-legged, brown, wirelike insects migrate from waste areas to areas in and around homes. If they become a problem, apply carbaryl or diazinon as a spray to the foundation of the house for 3 or 4 feet into the yard.

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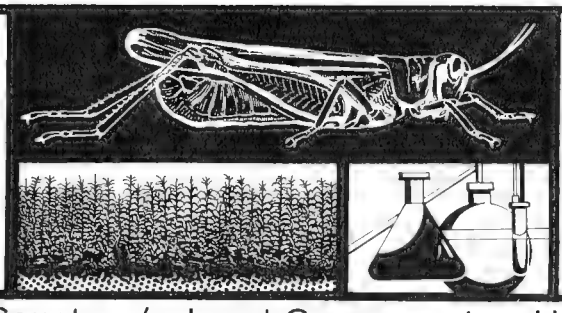

INSECT SURVEY BULLETIN

College of Agriculture
University of Illinois
and Natural History Survey, Urbana, Illinois

State / County / Local Groups / U. S. Department of Agriculture Cooperating

FOR IMMEDIATE RELEASE August 18, 1967

INSECT SURVEY BULLETIN NO. 19

This series of weekly bulletins provides a general look at the insect situation (fruit insects excepted) along with suggested abbreviated control measures. Each individual should check his own fields to determine local conditions.

Corn Insects

European corn borer moth emergence has been delayed by the cool weather in the north-central and northern sections. Moths will continue to emerge and lay eggs for at least 3 weeks in those areas. Infestations are expected to be greatest in the northwestern and western sections.

Although corn borers will deposit eggs on all corn, they tend to concentrate their egg-laying in fields in the late whorl to early silk stage. Treatment is profitable if there is an average of one or more egg masses per plant. Use 1 pound of actual diazinon or 1 1/2 pounds of actual carbaryl per acre as granules or sprays. Allow 10 days to elapse before making ensilage or stover when using diazinon; carbaryl has no waiting period. Commercial applicators may prefer to use EPN or parathion; they also provide good control of corn borers. Parathion has a 12-day waiting period between treatment and harvest; EPN, a 14-day waiting period.

The green or yellowish-brown adults of the northern corn rootworm can still be found in many cornfields. In a few fields in the northern two-thirds of the state as many as 10 to 20 per plant are present. These are fields in which no soil insecticide was applied or in which the insect has developed resistance to the chlorinated hydrocarbons, aldrin and heptachlor.

A survey of several hundred cornfields the past two weeks indicates that northern corn rootworm resistance has become more general and that numbers are at a record high. In addition, this year we observed larval damage in several fields of first- and second-year corn. Generally, only continuous corn (third year or more) is damaged and only rarely a field of first- or second-year corn. Most fields have now pollinated, and silk feeding is not important even though the beetles are feeding on and damaging ear tips slightly. In general, treatment at this time will not be profitable, except in late-maturing fields where pollination may still be affected by silk feeding.

Western corn rootworm adults were found for the first time this week in Bureau and and Carroll counties. They have now been identified in eight new counties this year and more are expected. By 1968 this insect will probably be present throughout the northern half of the state. The western corn rootworm cross-mates with

the northern corn rootworm, and the offspring produced more nearly resemble the western. Therefore within a few years the more severe and resistant western corn rootworm will probably largely replace the northern. A random survey of 10 fields in Mercer County (county most heavily infested with western corn rootworm) a week ago, showed an average of 10.9 western adults per 25 plants, while northern adults averaged 2.6 per 25 plants. The adult western is an aggressive, active insect with a large appetite. One western probably does as much feeding as 2 or 3 northerns.

Some fields in Mercer County are averaging 15 to 20 or more western adults per plant. Control is justified when numbers are this high and tip feeding is severe, even though pollination is complete. Control of adults should help to reduce egg-laying, resulting in somewhat fewer larvae next year. However, control of adults will not prevent problems with larvae in 1968 if the field will be in corn again. Sprays of carbaryl, diazinon, or malathion at 1 pound per acre of actual insecticide are effective. Commercial applicators may prefer to use 1/4 pound of parathion per acre. Allow 5 days between treatment and harvest for malathion, 10 days for diazinon, and 12 days for parathion; carbaryl has no waiting period.

Fall armyworm damage is evident in some late-maturing cornfields. These brown to dull-green, smooth-skinned worms feed in the whorl, giving plants a ragged appearance as the leaves emerge. Unless 20 to 25 percent of the plants still have worms less than 1 inch long, treatment is not justified in field corn. For control, apply either 1 1/2 pounds per acre of actual carbaryl or toxaphene as granules. Toxaphene should be used only if the corn is to be used as grain; it should not be used on ensilage corn. Do not apply toxaphene to fields adjacent to fish-bearing waters.

Special Note to Seed Producers: Seed-corn producers should watch for fall armyworms as well as the corn earworm in late-maturing fields since both feed on tip kernels and scar other kernels from now until harvest. Corn earworm moths in central and northern sections, although still low in numbers, increased this past week. Carbaryl sprays should protect the ears against invasion by these insects, but must be applied before the worms enter the ear. Make the first application when the field reaches full silk and repeat the treatment in 7 days for best results.

Corn leaf aphids increased in a few late-maturing fields in the central and northern sections. In early- and medium-maturing fields, the aphids that were present have about disappeared. In general, the aphid threat is about over for this year, and infestations and injury were much less than last year.

Soybean Insects

Populations of green cloverworms are gradually increasing in soybeans. A few parasitized worms were observed this week. These pale-green worms, with two thin white stripes along each side, strip the leaves but do not attack pods as do grasshoppers and bean leaf beetles. As yet, no serious infestations have been reported but problems could arise during the next few weeks.

In general, early-maturing beans may escape injury, since if pods have filled, defoliation is not important. Damage is most severe when defoliation occurs during the period from half-filled pods to mature but green beans. The effect of varying degrees of defoliation on yield reduction in soybeans is largely unknown.

As a rule-of-thumb guide in fields where pods are not filled, we feel an average of 6 or more worms per linear foot of drill row justifies treatment. Use 1 1/2 pounds of toxaphene or 1 pound of carbaryl per acre for control. Do not feed toxaphene-treated forage to dairy animals or livestock fattening for slaughter. Do not apply toxaphene to fields adjacent to fish-bearing waters.

Forage Insects

New seedings of alfalfa may be severely damaged by the garden webworm and other leaf-feeding caterpillars. Watch new seedings closely, and at first sign of damage apply a spray of carbaryl at 1 pound of actual per acre, or toxaphene at 1 1/2 pounds of actual per acre. Do not feed toxaphene-treated forage to dairy cattle or livestock fattening for slaughter.

Homeowner Insect Problems

Flies are more of a problem in homes than they have been all summer. The cool nights cause them to move indoors for warmth. To lessen fly annoyance in and around the home follow these two steps:

1. In attached garages, under breezeways, or on porches, hang one dimetilan fly band (Snip fly band) per 75 square feet. Wipe the bands every two weeks with a damp rag to remove dust deposits. Flies landing on the bands will be killed before they can enter the house. The bands will continue to remain active for a year or two.

2. Hang one 20-percent dichlorvos (DDVP, Vapona) plastic resin strip for every 1,000 cubic feet of space (about one per room) in the kitchen and in other rooms where flies congregate. The dichlorvos vaporizes slowly, killing flies and mosquitoes without harming people or pets. These strips are effective for about 4 to 6 weeks. As an added precaution, hang the strips out of reach of children and away from fish bowls or food counters.

In place of the dichlorvos resin strips, you can use a 0.1-percent pyrethrum space spray, applied from a pressurized can, for quick knockdown of flies and mosquitoes. Repeat treatments will be needed with the space spray.

Millipedes are moving into homes from shrubbery beds, lawns, storm sewers, and nearby wasteland areas having a heavy trash cover. These brown, hard-shelled, slow-moving worms have two pairs of legs per body segment. They often curl up in a tight coil and prefer dark, damp areas in basements and garages. When numerous, they wander throughout the house. Cool weather causes them to seek shelter indoors.

In cases of heavy migration, spray lawns and shrubbery beds with carbaryl or diazinon. This provides a barrier zone in which they are killed and prevents them from gaining access to the home. If migration persists, repeat the treatment in a week or two. For minor problems, limited spraying of a 3- to 4-foot-wide area around the house foundation should be adequate. Apply approximately 2 pounds of actual carbaryl or 1 pound of actual diazinon in 25 gallons of water for each 10,000 square feet of area treated. This same treatment will control sod webworms and leafhoppers in lawns, but it is ineffective against grubs.

Mosquitoes have been heavy in many areas through much of the summer and populations continue to remain high. The following suggestions will help to lessen mosquito numbers: (1) Eliminate standing water in such places as eave troughs, old tires,

tin cans, childrens' toys, storm sewers, etc. (2) Apply a water-base spray containing 1-percent malathion (2 ounces of 50- to 57-percent liquid emulsion concentrate per gallon of water) to shrubbery and tall grass. Repeat the treatment every week or two if needed. (3) Keep the screens on doors and windows in good repair. (4) Hang plastic resin strips (2" x 10") containing 20-percent dichlorvos (DDV))--one strip per 1,000 cubic feet of space, or about one per room. These strips will kill mosquitoes and flies for 4 to 6 weeks. As an added precaution, hang the strips where children can't reach them and away from fish bowls and food counters. A 0.1-percent pyrethrin space spray--applied from a pressurized spray can--can be used for quick knockdown in place of the dichlorvos resin strips. Frequent treatments will be needed during problem periods. (5) When entering mosquito-infested areas, use a repellent. One of the most effective mosquito repellents is DEET (diethyltoluamide). (6) For quick knockdown at cookouts, outdoor parties, or picnics, use either 0.1-percent pyrethrin or 0.5- to 1-percent dichlorvos (DDVP) as an oil- or water-base space spray. Spray the mist lightly beneath tables and chairs and into the air for a few feet around the area. Repeat the treatment as needed.

Sod webworm moths can be seen flying over lawns at dusk. They hide in the tall grass and shrubbery during the day. These buff-colored moths have been laying eggs for the last 2 to 3 weeks. If the worms are going to be a problem, they should be causing damage by now. Brown, irregular spots in the lawn are an indication of possible webworm damage. The worm stage hides in the thatch and is difficult to find. Their silken-lined tunnels, droppings, and cut pieces of grass are more apparent. If treatment becomes necessary, apply 2 pounds of actual carbaryl, 1 pound of actual diazinon, or 1 1/4 pounds of actual trichlorfon per 10,000 square feet. Apply the amount of insecticide suggested in at least 25 gallons of water. Do not water for 3 days after treatment. Granular forms of the same insecticide can be applied from a fertilizer spreader in place of the spray.

Fall webworms continue to defoliate certain shade trees and shrubs. They can be controlled by spraying with carbaryl. Use 2 tablespoons of the 50-percent wettable powder per gallon of water (2 pounds per 100 gallons).

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CAUTION: BEFORE APPLYING INSECTICIDES, READ THE LABELS CAREFULLY AND FOLLOW ALL PRECAUTIONS. THIS WILL NOT ONLY INSURE PERSONAL SAFETY, BUT WILL ALSO PREVENT RESIDUE HAZARDS.

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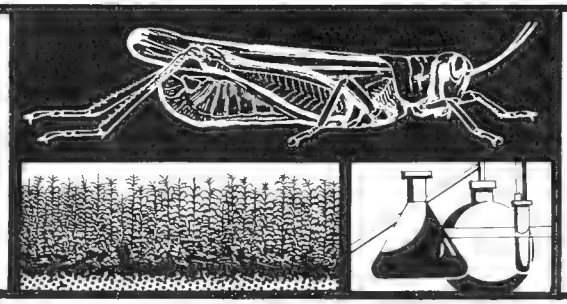

INSECT SURVEY BULLETIN

College of Agriculture
University of Illinois
and Natural History Survey, Urbana, Illinois

State / County / Local Groups / U. S. Department of Agriculture Cooperating

FOR IMMEDIATE RELEASE August 25, 1967

INSECT SURVEY BULLETIN NO. 20

This is the twentieth and final issue of a series of weekly bulletins that provides a general look at the insect situation (fruit insects excepted) along with suggested abbreviated control measures. Each individual should check his own fields to determine local conditions.

Corn Insects

Northern corn rootworm adults can still be found in a great many cornfields, and they are also present in small numbers in nearby clover fields. These green or yellowish-green beetles are still emerging from the soil in the northern part of the state. Egg-laying has probably begun. Control of these adults is not profitable at this time of the season, unless these adults are doing considerable damage to kernels on the ear tips.

Western corn rootworm adults in northwestern Illinois are feeding on some of the ear tips. These striped beetles are also feeding on the surface of corn leaves and on some brace roots. Control of western corn rootworm adults can be justified, if the number of adults is in the range of 15 to 20 beetles per plant. The control of adults should help to reduce egg-laying, resulting in somewhat fewer larvae next year. However, control of adults will not prevent problems with larvae in 1968, if the field will be in corn again. Sprays of carbaryl, diazinon, or malathion at 1 pound per acre of actual insecticide are effective. Commercial applicators may prefer to use 1/4 pound of parathion per acre. Allow 5 days between treatment and harvest for malathion, 10 days for diazinon, and 12 days for parathion; carbaryl has no waiting period.

An ideal time to assess the corn rootworm situation in a cornfield is at this time of year. If no rootworm adults are present on or around the corn plants, then control has been achieved by either chemical or cultural methods--usually rotation. If rootworm adults are present with a range of 5 or more beetles per plant, then there were larvae damaging the corn roots. If the beetles are very numerous, and the plants are lodged, and chemical control with either aldrin or heptachlor was used several years in succession, then the rootworms have become resistant.

European corn borer moths are still laying eggs in northern Illinois. Unseasonably cool nights have reduced egg-laying, but some late-maturing fields in the northwestern section of the state are attractive to moths as egg-laying sites.

Fall armyworm damage is evident in some late-maturing cornfields. These brown to dull-green, smooth-skinned worms feed in the whorl, giving plants a ragged appearance as the leaves emerge. Unless 20 to 25 percent of the plants still have worms

less than 1 inch long, treatment is not justified in field corn. For control, apply either 1 1/2 pounds per acre of actual carbaryl or toxaphene as granules. Toxaphene should be used only if the corn is to be used as grain; it should not be used on ensilage corn. Do not apply toxaphene to fields adjacent to fish-bearing waters.

Soybean Insects

Green cloverworm populations have remained steady during the past week in soybean fields. Some fields in the central section of the state average 3 to 4 worms per foot of row. Early-maturing soybeans will escape yield loss from these worms. These pale-green worms with two thin white stripes along each side strip the leaves but do not damage the pods. After the pods have filled, leaf damage will not affect the yield. If the pods are not filled and there is an average of 6 or more worms per linear foot of drill row, treatment is justified. Use 1 1/2 pounds of toxaphene or 1 pound of carbaryl per acre for control. Do not feed toxaphene-treated forage to dairy animals or livestock fattening for slaughter. Do not apply toxaphene to fields adjacent to fish-bearing waters.

Grasshopper nymphs have begun migrating from fence rows, ditches, and roadsides into stands of corn, soybeans, hay fields, and pastures. In most instances, populations are small and control will not be necessary. But as these nymphs mature, they will do more damage. If large numbers of these insects have been observed and are causing damage, especially to pods, they can be controlled with carbaryl (Sevin), diazinon, malathion, or naled (Dibrom).

Homeowner Insect Problems

Mosquitoes continue to be a nuisance, especially where there have been numerous rains. The following suggestions are repeated: (1) Eliminate standing water in such places as eave troughs, old tires, tin cans, childrens' toys, storm sewers, etc. (2) Apply a water-base spray containing 1-percent malathion (2 ounces of 50- to 57-percent liquid emulsion concentrate per gallon of water) to shrubbery and tall grass. Repeat the treatment every week or two if needed. (3) Keep the screens on doors and windows in good repair. (4) Hang plastic resin strips (2" x 10") containing 20-percent dichlorvos (DDVP)--one strip per 1,000 cubic feet of space, or about one per room. These strips will kill mosquitoes and flies for 4 to 6 weeks. As an added precaution, hang the strips where children can't reach them and away from fish bowls and food counters. A 0.1-percent pyrethrin space spray--applied from a pressurized spray can--can be used for quick knockdown in place of the dichlorvos resin strips. Frequent treatments will be needed during problem periods. (5) When entering mosquito-infested areas, use a repellent. One of the most effective mosquito repellents is DEET (diethyltoluamide). (6) For quick knockdown at cookouts, outdoor parties, or picnics, use either 0.1-percent pyrethrin or 0.5- to 1-percent dichlorvos (DDVP) as an oil- or water-base space spray. Spray the mist lightly beneath tables and chairs and into the air for a few feet around the area. Repeat the treatment as needed.

Fall webworms continue to defoliate certain shade trees and shrubs. They can be controlled by spraying with carbaryl. Use 2 tablespoons of the 50-percent wettable powder per gallon of water (2 pounds per 100 gallons).

Second-generation elm leaf beetle larvae are defoliating Chinese elms. These second-generation beetles can be controlled with carbaryl, DDT, or lead arsenate.

Fleas are causing problems to returning vacationists. The adult fleas have developed from the worm stage in dog and cat beds or resting areas. The worms will hatch in such places as rugs or upholstered furniture and in the soil in flower and shrubbery beds from eggs laid by adult fleas that drop from the dog or cat. Hungry adult fleas will spread throughout the house and yard. For control, treat areas where fleas are found with carbaryl (Sevin) or malathion as a dust or spray. The dog or cat can also be treated with the same material.

Aphids are numerous on many shrubs and flowers. These small, green, soft-bodied sucking insects secrete a sticky material called "honeydew." Leaves of infested plants usually are curled and discolored. For control, spray the foliage thoroughly-using 2 teaspoons of 50- to 57-percent malathion, or 25-percent diazinon E.C. per gallon of water. Do not use malathion on African violets or cannaert red cedar. Do not use diazinon on ferns or hibiscus.

Second generation red-headed sawflies are defoliating pine trees in plantations in some areas of the state. If damage warrants control, apply DDT at the rate of 2 pounds of 50-percent wettable powder or 2 quarts of 25-percent emulsifiable concentrate to 100 gallons of water.

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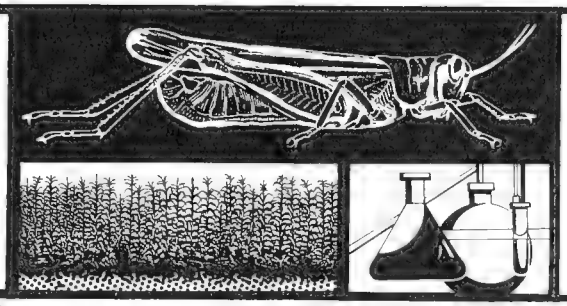

INSECT SURVEY BULLETIN

College of Agriculture
University of Illinois
and Natural History Survey, Urbana, Illinois

State / County / Local Groups / U. S. Department of Agriculture Cooperating

FOR IMMEDIATE RELEASE November 29, 1967

SPECIAL ISSUE

We receive many inquiries about changes in recommendations in the fall of each year but prior to the publication of printed circulars. We are sending you these Special Suggestions and Major Changes for 1968 to help answer your "early" questions. No caution statements, time limitations between application and harvest, or rates per acre are included. This information should be on the label. These special suggestions will appear in printed form in University of Illinois College of Agriculture Circular 899 and in the Illinois Custom Spray Operators' Training School Abstracts of Presentations.

These statements have been reviewed by entomologists of the Illinois Natural History Survey and University of Illinois College of Agriculture and were prepared by H.B. Petty, Steve Moore, Roscoe Randell, and Don Kuhlman from information gathered by entomologists in Illinois and the USDA Agricultural Research Service.

SPECIAL SUGGESTIONS AND MAJOR CHANGES FOR 1968

CHANGES IN SUGGESTIONS DURING 1968

As of January 1, 1968, use of a pesticide on food or feed will not be approved unless definite tolerances, no matter how minute, have been established for each crop and each chemical. Under certain conditions, there may be a date extension of this regulation. Although it is hoped that all manufacturers of pesticides used on Illinois crops will have complied and no labels will have been rescinded, the user should be alert for legal changes during 1968. If some changes become necessary during 1968, they will be announced publicly; it will, however, be impossible to revise this circular until November, 1968.

DAIRY FARMS

Dairy farmers are cautioned against the use of the chlorinated hydrocarbons, *aldrin*, *chlordane*, *dieldrin*, *DDT*, *endrin*, *heptachlor*, or *lindane*--either as foliar treatments or soil treatments, even though they have been used for many years. The tolerance in milk, for most of these insecticides, is still zero. Even slight drift onto dairy pastures, hay crops, or other dairy forage crops will result in minute but traceable amounts in milk and body fat, which will then be excreted in the milk--presenting a legal problem, not a public health problem.

Because of possible drift, do not apply sprays or dusts of *aldrin*, *DDT*, *chlordane*, *dieldrin*, *heptachlor*, or *lindane* to fields adjacent to dairy hay, pasture, or ensilage crops.

The greatest possibility of milk contamination from use of aldrin or heptachlor as corn soil insecticides exists in use of harvested cornfields as a grazing or resting area for dairy cattle. As the animals contact the treated soil and pick up corn from the ground, they pick up soil containing sufficient insecticide to be detectable in the milk. Use of aldrin or heptachlor as corn soil insecticides does not present a residue problem in the grain. Corn for ensilage or stover should be cut about 18 inches above the ground, if soil treatments of aldrin or heptachlor have been used. Hay produced even 2 years after the last soil application may have slight residues from contaminated soil particles.

When buying corn ensilage or other forage, be sure it does not have an objectionable residue. Question the supplier; if in doubt, have a chemical analysis made. These statements apply to heifers and dry cows, as well as producing cows.

Do not apply these chlorinated hydrocarbons to dairy buildings or barns or on dairy cattle.

Toxaphene is a chlorinated hydrocarbon not included in the above list. It will appear in the milk when dairy animals eat toxaphene-treated forage; however, it is not stored in the animal's body, and they will produce clean milk in about 1 week after exposure. A dairyman may wish to use toxaphene on his farm to control insect pests of soybeans, corn (for grain), or small grain providing he does not use them for pasture, hay, ensilage, or stover. In using toxaphene, the dairyman should take all precautions to avoid drift onto dairy pasture, hay, or other forage crops.

SOYBEAN FARMS

Recent research shows that aldrin and heptachlor (and their breakdown products, dieldrin and heptachlor epoxide) are translocated to the beans grown in the field the year of application. This research also shows that soybeans following corn, to which the soil insecticides aldrin and heptachlor have been applied, absorb small but still-detectable amounts of these insecticides.

On the basis of preliminary research and guided by the results of random surveys of Illinois soybeans, we suggest to Illinois soybean producers the following uses of insecticides in 1968:

1. Do not use the soil insecticides, aldrin, chlordane, dieldrin, endrin, heptachlor, or lindane as a soil or foliar treatment for soybeans. Aldrin, dieldrin, and heptachlor are not cleared for use on soybeans as a foliar treatment. DDT was granted a tolerance in soybeans, but we do not recommend that it be used by Illinois farmers.

2. At present, allow 2 years to elapse after the last application before planting soybeans in a field where either aldrin or heptachlor have been applied annually for 5 or more years. Thus, if aldrin or heptachlor were applied to a field from 1963 through 1967, skip 1968; and do not grow soybeans in this field until 1969.

3. For the common Illinois rotations (which include soybeans, corn, and grains), continue to plant soybeans as you have in the past. The future of this suggestion depends on research and survey data.

FARMS WITH CONTINUOUS CORN

Northern and western corn rootworm populations increase rapidly in fields where corn is grown for 3 or more years in succession. The beetles emerge in late July and August, feed on silks and pollen, and deposit eggs in the soil. The eggs hatch into larvae the following June. The larvae feed on the corn roots and by early August, the corn begins to lodge.

Until recently, aldrin or heptachlor (as soil insecticides applied at or before planting) provided excellent protection. However, in 1962, northern corn rootworms highly resistant to aldrin and heptachlor appeared. By 1965, there were individual problem fields in almost every county in the northern half of Illinois. This trend continued in 1966, and the extent of the resistance problem increased. By 1967, failures to control rootworms were common in the northern half of Illinois, and corn lodged in many fields where corn had been grown for 3 or more years continuously. At present, if you have grown corn for 3 years or more in succession in the field and if there were lots of green beetles in the fresh silks during August, you probably have resistant northern corn rootworms.

In 1967, western corn rootworm attack caused severe lodging and yield losses in many fields in Mercer County and neighboring counties. This rootworm species is now present in all counties north and west of a line from Quincy to Peoria to Belvidere, and an occasional specimen could be present in every county in the northern half of Illinois. Furthermore, all western corn rootworms in Illinois are highly resistant to aldrin and heptachlor. In 1968, commercial damage from this rootworm may occur in Hancock, Henderson, Mercer, Rock Island, Whiteside, Lee, Bureau, Henry, Knox, McDonough, Peoria, Stark, Fulton, and Warren counties.

Viewing the extent of the population and the resistance to aldrin and heptachlor of both the northern and western corn rootworms, we can assume that all fields (particularly those in the northern half of Illinois) planted to corn for 3 or more consecutive years could have moderate to severe lodging from rootworm attack in 1968. Although the use of aldrin or heptachlor may provide satisfactory control in some fields, attempts to control corn rootworms with these two, previously effective soil insecticides will meet with failure in the majority of cases. Therefore, farmers, particularly those in the northern half of Illinois, who have fields that are to be planted to corn for the third consecutive year or longer should consider some program other than the conventional use of aldrin or heptachlor to control northern and western corn rootworms.

Unfortunately, there is no insecticide presently available that will control rootworms on all dates of planting when applied at planting time. Therefore, a crop rotation may be the easiest method for corn rootworm control; grow some other crop in the field for 2 years. When rotating to control resistant corn rootworms, use a crop other than soybeans in 1968 if you have used aldrin or heptachlor annually for 5 or more years (including 1967). If you have applied aldrin or heptachlor annually for several years, but not in 1967, you can plant soybeans in 1968.

Research entomologists of the Illinois Natural History Survey have shown that phorate (Thimet), BUX ten (0-5353), and diazinon granules applied in a 7-inch band ahead of the press wheel to late-planted corn will control the rootworms that hatch in late June and early July. Phorate and BUX ten applied to mid-season plantings usually last long enough to provide a reasonable degree of root protection during rootworm attack in late June and early July. No insecticide used at planting on early-planted corn has given practical rootworm control.

To control rootworms on early-planted corn, the entomologists of several Midwestern states have shown that a basal application of insecticide during cultivation will provide protection against rootworm attack. A special applicator on the cultivator directs organic phosphate insecticide granules at the base of the plant. This kills rootworms for about 6 inches on each side of the plant, allowing roots to establish themselves and secure the plant. The three most effective insecticides for basal applications appear to be phorate, diazinon, and disulfoton granules.

Several organic phosphates and carbamates are being sold for planting-time application for rootworm control. Of the ones tested in Illinois, only those above gave consistent and satisfactory results. Others failed to provide root protection to the corn when conditions were slightly adverse. Fertilizer-insecticide mixtures are discouraged at this time; band fertilizers are generally applied to only one side of the row and results from such treatments have been no better than untreated plots.

POLLINATION INJURY BY ROOTWORM BEETLE FEEDING

Corn rootworm beetles feed on silks. When these beetles are numerous during pollination, kernel set can be affected, particularly in late-planted fields where silking has just begun. If beetle emergence occurs during dry silk, then pollination is not seriously hurt. Control will be profitable when 5 to 10 or more beetles per ear are present and not more than 50 percent of the plants have silked.

CONDENSED SOIL INSECTICIDE SUGGESTIONS

General non-dairy farms: In a normal rotation, continue to use aldrin or heptachlor broadcast and disked-in before planting (or in the row at planting time) to control white grubs, wireworms, grape colaspis, and seed-infesting insects. Broadcast applications generally control cutworms. But if a row treatment is used, plan to apply a post-planting or emergency application of carbaryl, diazinon, toxaphene, or trichlorfon for cutworms if necessary. (See page 5, 1968 revised Circular 899 for details.)

Dairy farms: Use an organic phosphate or carbamate insecticide as described for rootworm control. For early-planted corn, use a planter-box seed treatment to supplement early-June basal applications; but take precautions not to interfere with the seeding rate. In some instances, you may have to apply a post-planting or emergency application of one of the insecticides listed in the table for cutworm control.

Soybeans: Do not apply aldrin, chlordane, dieldrin, endrin, or heptachlor as a soil or foliar treatment for soybean insects. If you have applied aldrin or heptachlor annually for 5 or more years for corn soil insect control, skip 1 year before planting soybeans.

Continuous corn and control of resistant corn rootworms: When planting early, plan to use a basal insecticide application in the fore part of June. With mid-season plantings, you may wish to try a planting-time treatment of phorate or BUX ten (0-5353) in a 7-inch band ahead of the press wheel. For late-planted corn, use phorate, BUX ten (0-5353), or diazinon granules ahead of the press wheel.

For early-planted corn, you may want to use an aldrin or heptachlor preplanting or planting-time treatment, or at least a planter-box seed treatment.

ALFALFA WEEVIL

Suggested insecticides are methyl parathion, azinphosmethyl, malathion, malathion plus methoxychlor, or diazinon plus methoxychlor. (See page 7, 1968 revised Circular 899 for details.)

Use of flamers or burners during the dormant winter period to burn alfalfa stems and debris has met with varying success. Special burners are available for this purpose. Their success in alfalfa weevil control will depend on the extent of fall and winter egg laying by the adults, as they deposit eggs in alfalfa stems. When these are burned during the winter months (or in the early spring before plant growth begins), the attack by weevil is delayed. Thus, burning replaces the first insecticide application. Because the value of this method depends on fall and winter egg laying, it may be limited in use to the southern third of Illinois. Few eggs will be laid before spring in the northern half of Illinois.

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